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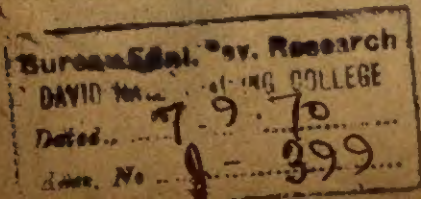
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CONTENTS OF VOLUME 117

JULY, 1960

PRESIDENTIAL ADDRESS. William Malamud . . .	1	BASIC CRITERIA OF SCHIZOPHRENIA. Howard N. Cooper . . .	66
DR. WILLIAM MALAMUD. Bernard J. Alpers . . .	11	CLINICAL NOTES :	
CHILD PSYCHIATRY: RETROSPECT AND PROSPECT. Leo Kanner . . .	15	Methoxypromazine in Chronic Schizophrenia. Max Apfeldorf, Hans G. Bauer, and Thomas H. McGavack . . .	72
SOME PROBLEMS OF DOSE VARIATION IN THE USE OF TRANQUILIZING DRUGS. Sidney Malitz, and Bernard Wilkely . . .	23	Adjuvant Therapy with Isocarboxazid. Stanley R. Dean . . .	73
BACKGROUND FACTORS AND SYMPTOM PRESENTATION IN A CHILD GUIDANCE CLINIC. Frank G. Buckman, and Marvin Reznikoff . . .	30	Rapid Intensive Treatment of Impending Relapse. Herman C. Denber, and Paul Rajotte . . .	74
A CHILDREN'S UNIT IN A STATE HOSPITAL. Nicholas E. Stratas, and K. T. Schmidt . . .	34	A Comparative Trial of ECT and Tofranil. H. Merskey, E. M. Bruce, N. Crone, G. FitzPatrick, S. J. Frewin, A. Gillis, C. F. Lascelles, and L. J. Levene . . .	76
CASTE AND MENTAL HOSPITAL ADMISSIONS IN MYSORE STATE, INDIA. J. Hoenig, and Uma Sreenivasan . . .	37	Unrelatedness of Mecholyl Chloride Autonomic Reaction Indices. David Pearl, and Harry Vanderkamp . . .	77
A PSYCHIATRIC CENSUS OF THE SOUTH PACIFIC. Eric Berne . . .	44	CASE REPORTS :	
MURDER WITHOUT APPARENT MOTIVE: A STUDY IN PERSONALITY DISORGANIZATION. Joseph Satten, Karl A. Menninger, Irwin Rosen, and Martin Mayman . . .	48	Gilles de la Tourette's Disease. Jerome M. Schneck . . .	78
THE HYPOTHESIS OF RECIPROCAL COMPLEMENTARITY. A. H. Hobbs . . .	54	HISTORICAL NOTES :	
SOME PATHOLOGICAL FINDINGS IN SCHIZOPHRENICS. Donald L. Howie . . .	59	Pietro Pisani (1760-1837): A Precursor of Modern Mental Hospital Treatment. George Mora . . .	79
URINARY EXCRETION OF TRYPTOPHAN METABOLITES BY SCHIZOPHRENIC INDIVIDUALS. F. Christine Brown, J. B. White, Jr., and J. K. Kennedy . . .	63	COMMENTS :	
PROBLEMS IN THE APPLICATION OF THE		Annual Meeting, 1960 . . .	82
		Editorial Board Changes . . .	82
		CORRESPONDENCE :	
		Dynamic Orientation . . .	85
		Marriage Annulment . . .	85
		NEWS AND NOTES . . .	86
		BOOK REVIEWS . . .	89

AUGUST, 1960

TREATMENT OF SCHIZOPHRENIC REACTIONS WITH PHENOTHIAZINE DERIVATIVES: A COMPARATIVE STUDY OF CHLORPROMAZINE, TRIFLUOPROMAZINE, MEPHAZINE, PROCHLORPERAZINE, PERPHENAZINE AND PHENOBARBITAL. J. F. Casey, Julian J. Lasky, C. James Klett, and Leo E. Hollister . . .	97	THE OPERATIONAL MATRIX OF PSYCHIATRIC PRACTICE. II. VARIABILITY IN PSYCHIATRIC IMPRESSIONS AND THE PROJECTION HYPOTHESIS. John H. Rohrer, and George N. Raines . . .	133
MODES OF ABSTRACT THINKING AND PSYCHOSIS. N. McConaghy . . .	106	AN EXPERIENCE OF PSYCHIATRY IN BRITAIN AND AMERICA. Henry R. Rollin . . .	140
SOCIOPSYCHOLOGICAL CHARACTERISTICS OF RESIDENT PSYCHIATRISTS AND THEIR USE OF DRUG THERAPY. Gerald L. Klerman, Myron R. Sharaf, Mathilda Holzman, and Daniel J. Levinson . . .	111	MOTOR FUNCTION IN MENTATION; IMAGERY AND HALLUCINATION; THE INDEPENDENCE OF THE HIGHEST CEREBRAL CENTERS. Max Levin . . .	142
HAZARDS OF DRUG EVALUATION: TRIALS OF 84 NON-APPROVED DRUGS. J. A. Smith, and Cecil L. Wittson . . .	118	THE USE OF RAUWOLFIA FOR THE TREATMENT OF PSYCHOSES BY NIGERIAN NATIVE DOCTORS. Raymond Prince . . .	147
THE RELATIONSHIP OF MENTAL AND PHYSICAL STATUS IN INSTITUTIONALIZED AGED PERSONS. A. I. Goldfarb, R. L. Kahn, M. Pollack, and I. E. Gerber . . .	120	CLINICAL NOTES :	
TUBERCULOSIS IN STATE MENTAL HOSPITALS. James W. MacDonald . . .	125	Tranlycypromine in Depression: A Clinical Report. Henry V. Agin . . .	150
		Memory Changes with MAO Inhibitor Therapy. Leon D. Hankoff, and Boris Heller . . .	151
		Persistent Muscular Restlessness after Phenothiazine Treatment: Report of Three Cases. Walter Krug . . .	152
		On the Measurement of Aerenochrome in Blood. I. Munkvad, and Axel Randrup . . .	153

The Epinephrine-Mecholyl Test Applied to a State Hospital Population. <i>Pandelis K. Pandelidis, and Robert D. Busiek</i>	154	HISTORICAL NOTES : I Remember Stewart Paton. <i>Clarence B. Farrar</i>	160
Mood Elevating Effects of Chlorphenoxamine HCl. <i>Gerald H. Rozan, and David M. Eitenberg</i>	155	COMMENTS : 1960 Campaign for Polio Protection	163
Serum Protein Participation and New Drug Evaluation. <i>J. R. Shawyer, and Stanley M. Tarnowski</i>	156	The Social Problem of Epilepsy in Peru	163
Clinical Observations on Ritalin HCl (Methylphenidylacetate) Injectable, Multiple Dose Vial. <i>Kurt Witton</i>	156	CORRESPONDENCE : Psychiatrogenic Illness	165
Preliminary Results with Fluphenazine (Prolixin) in Chronic Psychotic Patients. <i>John P. Holt, and Eleanore Wright</i>	157	Ordinal Position in the Family	165
		Criteria for Research	166
		NEWS AND NOTES	168
		BOOK REVIEWS	171
		IN MEMORIAM : Flanders Dynbar	189
		George Neely Raines	190

SEPTEMBER, 1960

HUMAN ECOLOGY, DISEASE AND SCHIZOPHRENIA. <i>Loring F. Chapman, Lawrence E. Hinkle, and Harold G. Wolf</i>	193	CLINICAL NOTES : The Unique Therapeutic Properties of Tranlycypromine and Trifluoperazine (Paritalin). <i>Burrows, C. Schiele</i>	245
PSYCHIATRY, NATURE AND SCIENCE. <i>Martin Hoffman</i>	205	Neuraminic Acids in the Cerebrospinal Fluid of Schizophrenic and Oligophrenic Patients. <i>Gabriele Chistoni, and Roberto Zappoli</i>	246
PSYCHIC INGREDIENTS OF VARIOUS PERSONALITY TYPES. <i>Martin B. Giffen, James A. Kenny, and Theodore C. Kahn</i>	211	Tranlycypromine (Parnate) A New Monoamine Oxidase Inhibitor. <i>Frederick Lemere</i>	249
FURTHER STUDIES OF THE DOCTOR AS A CRUCIAL VARIABLE IN THE OUTCOME OF TREATMENT WITH SCHIZOPHRENIC PATIENTS. <i>John C. Whiteborn, and Barbara J. Betz</i>	215	CASE REPORTS : Treatment in Transvestism. <i>Veronica M. Pennington</i>	250
REPORT ON THE SEMINAR PROJECT FOR TEACHERS OF PSYCHIATRIC AIDES. <i>Garland K. Lewis</i>	224	HISTORICAL NOTES : Vetera et Nova	252
THE CONSUMPTION OF ALCOHOL AND THE HYPOTHESIS OF RECIPROCAL COMPLEMENTARITY. <i>A. H. Hobbs</i>	228	PROCEEDINGS OF THE AMERICAN PSYCHIATRIC ASSOCIATION : The One Hundred and Sixteenth Annual Meeting, Atlantic City, New Jersey, 1960	253
RECURRENT PSYCHOTIC DEPRESSION ASSOCIATED WITH HYPERCALCEMIA AND PARATHYROID ADENOMA. <i>Martin M. Mandel</i>	234	Report of Coordinating Chairman, Coordinating Committee on the Technical Aspects of Psychiatry	265
THE OBSSSSIVE-COMPULSIVE CHRONIC ALCOHOLIC. <i>Edward Podolsky</i>	236	COMMENTS : College Student Indiscipline In India	268
THE SIBLING RELATIONSHIP IN GROUP PSYCHOTHERAPY WITH PUERTO RICAN SCHIZOPHRENICS. <i>Eduardo D. Maldonado-Sierra, and Richard D. Trent</i>	239	CORRESPONDENCE : Activity of Niamid® Against Mycobacterium Tuberculosis and Cross Resistance to Isoniazid	269
		Nardil	270
		Psychiatrists in Federal Prison Service	272
		NEWS AND NOTES	274
		BOOK REVIEWS	277

OCTOBER, 1960

ADOLF MEYER RESEARCH LECTURE: THE STUDY OF DEFECT. <i>Sir Aubrey Lewis</i>	269	BRIEF OBJECTIVE MEASURES FOR THE DETERMINATION OF MENTAL STATUS IN THE AGED. <i>Alvin I. Goldfarb, Robert L. Kahn, Max Pollack, and Arthur Peck</i>	326
BATTEMENTS AND BRIDGES IN THE EAST. <i>Jules H. Masserman</i>	306	PRESENT DAY CONCEPTS IN NURSING SERVICE ADMINISTRATION IN HOSPITALS FOR THE MENTALLY ILL. <i>Angie F. Waldrum, and G. L. Jones</i>	329
SCRUPULOSITY: RELIGION AND OBSSSSIVE COMPULSIVE BEHAVIOR IN CHILDREN. <i>Wayne M. Weisner, and Rev. Pius A. Riffel</i>	314	COMMUNITY PRESSURES AND A STATE HOSPITAL PROGRAM FOR CHILDREN. <i>Joseph J. Reidy</i>	336
ADJUSTMENT OF EIGHTY DISCHARGED GERIATRIC-PSYCHIATRIC PATIENTS. <i>Morse P. Manson, and C. A. Engquist</i>	319	THE "ADEQUATE RELAXATION INTERIM" FOLLOWING SUCCINYLCHOLINE AD-	
SOME PSYCHOLOGICAL ASPECTS OF ISOLATED ANTARCTIC LIVING. <i>Charles S. Mullin, Jr.</i>	323		

MINISTRATION IN ELECTROSHOCKTHERAPY. David J. Impastato, Charles Buckman, Arthur Krell, Irving Pinsley, and Arthur S. Impastato	342	Kotbari, Nathan S. Kline, and Joseph A. Griffen	358
THE CULTIVATION OF COMMUNITY MENTAL HYGIENE LEADERSHIP ABILITY AS A PART OF A PSYCHIATRIC RESIDENT'S TRAINING. Howard M. Kern, and Caroline A. Chandler	346	Atropine-Like Poisoning Due to Tranquilizing Agents. Harbhajan Singh	360
A LONGITUDINAL STUDY OF SCHIZOPHRENIA. H. Klonoff, G. H. Hutton, G. H. Gundry, and T. T. Coulter	348	Clinical and Theoretical Observations on Phenelzine (Nardil) an Anti-Depressant Agent. Myron F. Weiner, and Robert A. Cole	361
CLINICAL NOTES :		A Comparative Controlled Study with Chlordiazepoxide. Marshall E. Smith	362
Effects of a Drug on the Body Odor of the Chronically Ill Mental Patient. Carl Gouldman	354	PRELIMINARY REPORTS :	
The Use of a New Ultra-Short-Acting Intravenous Anesthetic in Shock Therapy. William Karliner, and Louis J. Padula	355	A Preliminary Report on the Use of Stelazine and Parnate in Chronic Regressed and Withdrawn Patients. Harbhajan B. Singh, and Richard M. Free	364
Combined Pharmacofever Treatment with Imipramine (Tofranil) and Typhoid Vaccine in the Management of Depressive Conditions. H. E. Lehmann	356	HISTORICAL NOTES :	
A Comparison of Perphenazine, Prokettazine, Nialamide and MO-482 in Chronic Schizophrenics. John C. Saunders, Nantam J.		Georg Ernst Stahl. Ernest Harms	366
		POEMS :	
		Earl Bond	368
		COMMENTS :	
		Random Reflections	370
		CORRESPONDENCE :	
		Genetic Factors in Schizophrenia	373
		Urinary Excretions	374
		Dynamic Orientation	375
		NEWS AND NOTES	376
		BOOK REVIEWS	379

NOVEMBER, 1960

THE ACADEMIC LECTURE : A SOCIOLOGIST'S VIEWS OF PATIENT CARE. Leo Simmons	385	Combination Drug Therapy in Psychiatry. J. A. Baris	448
STUDIES OF BEHAVIOR AND THE METABOLISM OF INDOLE DERIVATIVES IN SCHIZOPHRENIA. Nyla J. Cole, Roger B. Allison, Melvin Gortatowski, and C. H. H. Branch	393	Revised Survey of Selected Psychopharmacological Agents. James P. Castell, and Sidney Malitz	449
STEPS TOWARD THE ISOLATION OF A SERUM FACTOR IN SCHIZOPHRENIA. Charles Frohman, Elliot D. Luby, Garfield Tourney, P. G. S. Beckett, and J. S. Gottlieb	401	Trifluoperazine : Report of a Clinical Trial in Back Ward Psychotic Patients. John A. Guido, and George Y. Abe	453
LONGITUDINAL CLINICAL AND NEUROCHEMICAL STUDIES ON SCHIZOPHRENIC AND MANIC-DEPRESSIVE PSYCHOSES. Samuel Bogoch, Karl T. Dussik, Christa Fender, and Peter Conran	409	On the Parenteral Use of Amitriptyline (Elavil-Merck). H. Freed	455
PSYCHOLOGIC FACTORS AND PSYCHIATRIC DISEASE IN HYPEREMESIS GRAVIDARUM : A FOLLOW-UP STUDY OF 69 VOMITERS AND 66 CONTROLS. Samuel Guze, Philip W. Majerus, W. B. DeLong, and Eli Robins	421	Clinical Trial of Methaminodiazepoxide (Librium). Morton L. Kurland, Robert S. Walzer, and Manfred Braum	456
THE IMPACT OF RECENT RESEARCH DEVELOPMENTS ON PRIVATE PRACTICE. Milton Rose, and Mary Ann Esser	429	The Use of Fluphenazine (Prolixin) in Rehabilitation of Chronic Schizophrenic Patients. Leon Reznickoff	457
IMPLICATIONS OF A LONGITUDINAL STUDY OF CHILD DEVELOPMENT FOR CHILD PSYCHIATRY. Stella Chess, Alexander Thomas, Herbert Birch, and Margaret Herzog	434	Convulsions Associated with Anti-Depressant Drugs. William L. Sharp	458
THE JUVENILE LEGISLATION IN INDIA. Nantam J. Kotbari	442	Psychiatric Facilities in Tokyo and Tel Aviv, 1958. Irwin J. Klein	459
THE IMPACT OF ATARACTIC DRUGS ON A MENTAL HOSPITAL OUTPATIENT CLINIC. Mariette Gross	444	HISTORICAL NOTES :	
CLINICAL NOTES :		Gottlieb Burckhardt, the Father of Topectomy. Christian Mueller	461
		Dr. William Cullen on Mania. Eric T. Carlson, and R. Bruce McPadden	463
		COMMENTS :	
		Dr. John Conolly's Croonian Lectures 1849	466
		CORRESPONDENCE :	
		EGO	467
		Two Early Reports on the Effects of Sensory Deprivation	467
		NEWS AND NOTES	469
		BOOK REVIEWS	472
		IN MEMORIAM :	
		Peter Frostig	479

DECEMBER, 1960

PSYCHIATRIC AND MEDICOLEGAL IMPLICATIONS OF GENETIC AND ENDOCRINOLOGIC RESEARCH IN SEX DETERMINATION. Karl Bowman, Bernice Engle, and Marjorie Mergener	481	tal Syndromes: A Multiblind Study. H. Azima, H. Duvost, and Dorothy Arthurs	546
THE COMMON FRONTIERS OF PSYCHIATRY AND LAW. Lawrence Z. Freedman, and Harold D. Lasswell	490	Preliminary Report on Mellaril in Epilepsy. Marie M. Frain	547
THE PSYCHOPHYSIOLOGIC SEQUELAE OF HEAD INJURIES. Arthur H. Auerbach, A. E. Scheffen, R. B. Reinhart, and C. K. Scholz	499	Trifluoperazine and Tranylcypromine in Chronic Refractory Schizophrenics. Walter Kruse	548
PRINCIPLES OF ADMINISTRATIVE THERAPY. D. H. Clark	506	Methylphenidate Interviews in Psychotherapy. George A. Rogers	549
BEHAVIORAL CHANGES DURING HYPOTHALAMIC OR LIMBIC STIMULATION IN THE MONKEY. Lorne D. Proctor, Robert D. Knighton, J. Bebin, and Jerome S. Lukaszewski	511	Imipramine Treatment. Michael J. Keith	550
THE PSYCHOTHERAPY THAT WAS MORAL TREATMENT. Eric T. Carlson, and Norman Dain	519	Imipramine Hydrochloride (Tofranil) and Enuresis. R. E. G. MacLean	551
LATE RESULTS OF ORBITAL UNDERCUTTING: REPORT OF 76 PATIENTS UNDERGOING QUANTITATIVE SELECTIVE LOBOTOMIES. William Beecher Scoville	525	A Study with Norethandrolone (Nilevar) in a Mental Hospital on Patients with Bowel and Bladder Incontinence. Sol Sherman	551
COMPARATIVE CLINICAL EXPERIENCE WITH FIVE ANTIDEPRESSANTS. John P. Holt, Eleanor R. Wright, and Arthur O. Hecker	533	CASE REPORTS:	
PROFOUND EXPERIMENTAL SENSORY ISOLATION. Jay T. Shurley	539	The Gambler and His Love. Iago Goldston	553
CLINICAL NOTES:		Gasoline Sniffing. R. V. Edwards	555
The Effect of R-1625 (Haloperidol) in Men-		Prolonged Phenothiazine Hepatitis: Report of a Case. Bruce H. Bailey, and Robert E. Kay	557
		COMMENTS:	
		Introspection	559
		CORRESPONDENCE:	
		Urinary Tests for Piperazine-Linked Phenothiazines and for Chlorpromazine	561
		Frankl's Logotherapy	563
		NEWS AND NOTES	565
		BOOK REVIEWS	570
		IN MEMORIAM:	
		Victor Vance Anderson	575

JANUARY, 1961

REVIEW OF PSYCHIATRIC PROGRESS 1960:		Psychiatric Social Work. Daniel O'Keefe	639
Heredity and Eugenics. Franz J. Kallmann	577	Mental Health in Education. W. Carson Ryan	640
Neurophysiology, Chemistry and Endocrinology. O. R. Langworthy	581	Psychiatric Nursing. Mary E. Liston	642
Electroencephalography. W. T. Liberson	584	Family Care and Outpatient Psychiatry. Walter E. Barton, and William T. St. John	644
Clinical Psychology. Frederick Wyatt	588	Forensic Psychiatry. Winfred Overholser	647
Clinical Psychiatry and Psychotherapy. Nolan Lewis, and Paul H. Hoch	591	Administrative Psychiatry. J. Martin Myers, and Lauren H. Smith	649
Physiological Treatment. Joseph Wortis	595	Military Psychiatry. Joseph S. Skobba	651
Psychosurgery. Walter Freeman	600	Psychiatric Education. Franklin G. Ebaugh, and Robert H. Barnes	653
Child Psychiatry; Mental Deficiency. Leon Eitenberg	601	Rehabilitation and Occupational Therapy. Franklin S. DuBois	657
Occupational Psychiatry. R. T. Collins	605	CORRESPONDENCE:	
Social Psychiatry. Fritz C. Redlich, and Max P. Pepper	610	Psychiatry and its Methods	664
Clinical Neurology. W. H. Timberlake	615	NEWS AND NOTES	665
Alcoholism. Karl M. Bowman	628	BOOK REVIEWS	668
Geriatrics. Karl M. Bowman, and Bernice Engle	630	IN MEMORIAM:	
Epilepsy. Walter J. Friedlander	632	William Gordon Lennox	671

FEBRUARY, 1961

THE CURRENT STATUS OF ARMY PSYCHIATRY. Albert J. Glass, James J. Gibbs, Vincent C. Sweeney, and Kenneth L. Artiss	673	COOPERATION FOR RESEARCH IN PSYCHIATRY AND LAW. Lawrence Zelic Freedman, and Harold D. Lasswell	692
CURRENT TRENDS IN REGARD TO CRIMINAL RESPONSIBILITY. Manfred S. Guttmacher	684	THE COMMUNICATION OF SUICIDAL INTENT PRIOR TO HOSPITALIZATION: A	

STUDY OF 87 PATIENTS. <i>W. Bradford DeLong, and Eli Robins</i>	695	lipemia in a Neuropsychiatric Hospital. <i>J. R. Shawver, J. S. Scarborough, and S. M. Tarnowski</i>	741
EXPERIENCES OF A PSYCHIATRIST AS A MEMBER OF A SURGICAL FACULTY. <i>William J. Hockaday</i>	706	A Clinical Trial Study of Imipramine Hydrochloride. <i>Nina Kateryniuk, and Charles W. Morris</i>	742
TRAINING IN PSYCHOTHERAPY: THE USE OF MARRIAGE COUNSELING IN A UNIVERSITY TEACHING CLINIC. <i>Kenneth E. Appel, H. M. Goodwin, H. P. Wood, and E. L. Askren</i>	709	Methaminodiazepoxide (Librium) in Chronic Refractory Anxiety. <i>A. H. Vogt</i>	743
EXPERIENCES WITH LARGE SCALE INTER-HOSPITAL COOPERATIVE RESEARCH IN CHEMOTHERAPY (THE VA COOPERATIVE STUDIES). <i>Engene M. Caffey</i>	713	Treatment of Schizophrenia with Proketazone. <i>Samuel Friedman, and Jane E. Olman</i>	745
THE CLINICAL SCREENING OF PSYCHOPHARMACOTHERAPEUTIC AGENTS: A CONSIDERATION OF METHODOLOGY. <i>James H. Ewing, Karl Rickels, and Harold H. Morris</i>	720	The Variation in Clinical Response to Marplan with Duration of Illness. <i>Robert R. Schopbach</i>	746
PSYCHIATRIC FACTORS IN MEDICAL STUDENTS IN DIFFICULTY: A FOLLOW-UP STUDY. <i>Raymond W. Wagoner, and Thornton W. Zeigler</i>	727	Interference of Indican in the Estimation of Phenothiazine. <i>S. Monckly Small, Jerome Levine, and Donald Levine</i>	747
EVALUATION OF EMOTIONAL DISTURBANCE IN 403 ISRAELI KIBBUTZ CHILDREN. <i>Mordecai Kaffman</i>	732	Clinical Experience with a New Phenothiazine (Piperacetazine). <i>William Mandel, K. Haworth, and L. M. Jones</i>	749
CLINICAL NOTES:		TRIBUTES:	
Amitriptyline (Elavil), A New Antidepressant. <i>Joseph A. Barsa, and John C. Saunders</i>	739	William Rush Dunton, Jr., Pioneer in Rehabilitation Medicine. A Canadian Tribute. <i>Helen P. Le Vesconte</i>	751
Chlorzoxazone as an Adjunct to Electric Convulsive Therapy. <i>Otto L. Bendheim</i>	740	COMMENTS:	
Evaluation of Plexonal as a Tranquilizer in the Geriatric Cardiac Patient. <i>H. Davanloo</i>	740	Child Psychiatry in Japan	753
Control of Hypercholesterolemia and Hyper-		CORRESPONDENCE:	
		Psychiatrists in Correctional Institutions	754
		Diagnoses on Insurance Papers	754
		Is Psychotherapy a Science?	755
		Revised Survey of Selected Psychopharmacological Agents	756
		OFFICIAL REPORTS:	
		Report of the Coordinating Committee on Professional Standards in Psychiatry	757
		NEWS AND NOTES	761
		BOOK REVIEWS	762

MARCH, 1961

DIAGNOSTIC AND DEMOGRAPHIC CHARACTERISTICS OF PATIENTS SEEN IN OUTPATIENT PSYCHIATRIC CLINICS FOR AN ENTIRE STATE (MARYLAND): IMPLICATIONS FOR THE PSYCHIATRIST AND THE MENTAL HEALTH PROGRAM PLANNER. <i>Anita K. Babn, Caroline A. Chandler, and Leon Eisenberg</i>	769	BEHAVIORAL CATEGORIES OF CHILDHOOD. <i>J. Franklin Robinson, Louis J. Vitale, and Carl J. Nitsche</i>	806
THE AMSTERDAM MUNICIPAL PSYCHIATRIC SERVICE: A PSYCHIATRIC-SOCIOLOGICAL REVIEW. <i>Paul V. Lemkau, and Guido M. Crocetti</i>	779	RESULTS OF MENTAL HOSPITAL TREATMENT OF TROUBLED YOUTH. <i>Donald M. Hamilton, Robert A. McKinley, Harry H. Moorhead, and James H. Wall</i>	811
INTRA AND EXTRAMURAL COMMUNITY PSYCHIATRY. <i>Maxwell Jones</i>	784	A COMPREHENSIVE HOSPITAL-COMMUNITY SERVICE IN A STATE HOSPITAL. <i>Robert C. Hunt, Ernest M. Gruenberg, Emanuel Hacken, and Matthew Huxley</i>	817
COMPARISON OF RESULTS OF CONTROLLED DRUG EVALUATIONS IN TWO STATE HOSPITALS. <i>Jackson A. Smith, Carl Gouldman, and Walter M. Gysin</i>	788	PROBLEMS IN THE CORRELATION OF PSYCHOPATHOLOGY WITH ELECTROENCEPHALOGRAPHIC ABNORMALITIES. <i>Ronald R. Koegler, Edward G. Colbert, and Richard D. Walter</i>	822
ALTERNATING PSYCHOSES IN TWINS: REPORT OF 4 CASES. <i>E. Gardner Jacobs, and Alvin M. Mesnikoff</i>	791	THE EFFECT OF PHENOTHIAZINE ON THE INTERACTIONAL BEHAVIOR OF SCHIZOPHRENIC PATIENTS. <i>Lucie A. Wood, Amy Miklowitz, Eliot D. Chapple, Martha F. Chapple, Nathan S. Kline, and John C. Saunders</i>	825
INDIVIDUALITY IN RESPONSES OF CHILDREN TO SIMILAR ENVIRONMENTAL SITUATIONS. <i>Alexander Thomas, Herbert G. Birch, Stella Chess, and Lillian C. Robbins</i>	798	CLINICAL NOTES:	
DISCUSSION OF TWO PAPERS. <i>F. J. Kallmann</i>	804	The Relation of Attitude Toward Medication to Treatment Outcomes in Chemotherapy. <i>Donald R. Gorham, and Lewis J. Sherman</i>	830

Thioridazine Hydrochloride in the Treatment of Behavior Disorders in Epileptics. <i>Pablo M. Panig, Marie A. DeLuca, and Roger G. Osterheld</i>	832	Enuresis and Thyrotoxicosis: A Brief Case Report. <i>Norman Sher</i>	840
Methoxydione (AHR-233) in Hospitalized Non-Psychotic Patients. <i>Leo Shatin, and Thomas H. Gilmore</i>	833	HISTORICAL NOTES:	
Hypertension Associated with Thioridazine HCl. <i>David W. Swanson</i>	834	Henry M. Hurd and the Johns Hopkins "Big Four." <i>Jerome M. Schuch</i>	842
CASE REPORTS:		The First Electroconvulsive Treatment Given in the United States. <i>Sydney E. Pulver</i>	845
Case Report of an Acute Overdosage of Nardil. <i>Sam H. Benbow, and Wm. C. Super</i>	836	COMMENTS:	
Post-Thyroidectomy Psychosis Treated with Imipramine. <i>Charles A. Cahill</i>	837	A National Institute of Social and Behavioral Pathology	847
"Placebo" (Simulation) Electroconvulsive Therapy. <i>J. A. Guido, and J. Jones</i>	838	CORRESPONDENCE:	
Camptocormia—A Rare Case in the Female. <i>Frederic Paul Kosbab</i>	839	Sensory Deprivation	849
		Treatment in Transvestism	849
		Ordinal Position	849
		IN MEMORIAM:	
		Robert Bush McGraw (1896-1960)	851
		NEWS AND NOTES	853
		BOOK REVIEWS	859

APRIL, 1961

A COMPARATIVE STUDY OF ANTIDEPRESSANTS IN BALANCED THERAPY. <i>David C. English</i>	865	Male Schizophrenics. <i>Paul Koch, Camille Laurin, and Roger Lemieux</i>	926
CRIMINAL GENESIS AND THE DEGREES OF RESPONSIBILITY IN EPILEPSIES. <i>Ralph S. Banay</i>	873	Effect of the Combined Administration of Imipramine and a Monoamine Oxidase Inhibitor. <i>Williamina A. Himwich, and JoAnn C. Petersen</i>	928
REINTEGRATION OF PSYCHOANALYSIS INTO TEACHING. <i>George C. Ham</i>	877	Comparison of Marplan and Tofranil in the Treatment of Depressive States. <i>Jane E. Olman, and Samuel Friedman</i>	929
A GRADUATE SCHOOL FOR PSYCHIATRIC EDUCATION OF PHYSICIANS IN MENTAL HOSPITAL SERVICE. <i>Paul H. Hoch, and Sandor Rado</i>	883	Thresholds for Drug-Induced Akathisia. <i>Daniel X. Freedman, and Jacob de Jong</i>	930
PROGNOSTIC FACTORS IN SCHIZOPHRENIA. <i>Werner Simon, and Robert D. Wirt</i>	887	Chlorprothixine (Taractan) and Isocarboxazid (Marplan) in Psychotic Depressions. <i>Harry P. Darling</i>	931
THERAPEUTIC DEVELOPMENT AND MANAGEMENT OF AN ADOLESCENT RESIDENTIAL TREATMENT SERVICE IN A STATE HOSPITAL. <i>James F. Sness, and Arthur Y. Hothino</i>	891	Effects of Trifluoperazine in Aged Depressed Female Patients. <i>George W. Brooks, and M. Glenn MacDonald</i>	932
TEACHING THE INTERPRETIVE PROCESS TO MEDICAL STUDENTS. <i>Sidney L. Werkman</i>	897	CASE REPORTS:	
PSYCHOTHERAPY AS A SYSTEM OF ACTION. <i>Helen C. Hendin, Henry L. Lennard, and Arnold Bernstein</i>	903	A Near Fatal Case of Imipramine Overdosage. <i>Genevieve A. Arneson</i>	934
CLINICAL PROFILES OF PAID NORMAL SUBJECTS VOLUNTEERING FOR HALLUCINOGEN DRUG STUDIES. <i>Harold Escover, Sidney Malitz, and Bernard Wilkens</i>	910	A Case of Psychosis Precipitated by Confinement in Long Distance Travel by Train. <i>Harbhajan Singh</i>	936
NEW INTERDISCIPLINARY TRENDS IN PSYCHIATRY. <i>Charles E. Gosben</i>	916	Aortic Dacron Graft Surgery and Electroshock. <i>A. H. Chapman</i>	937
CLINICAL NOTES:		Imipramine Hydrochloride in the Treatment of Narcolepsy. <i>Robert E. Peck</i>	938
A Controlled Clinical Study of Chlordiazepoxide. <i>Allan Z. Schwartzberg, and Robert W. Van de Castile</i>	922	Acute Toxic Psychosis Concurrent with Phenothiazine Therapy. <i>Albert W. Lang, and Robert A. Moore</i>	939
Clinical Report on Methaminodiazepoxide (Librium). <i>Robert R. Schopbach</i>	923	HISTORICAL NOTES:	
The Cause of False-Positive Tests for Piperazine-Linked Phenothiazines. <i>Jack J. Heyman, and Sidney Merlis</i>	924	Predecessors of Morton Prince's Dissociation Concept. <i>Ernest Harms</i>	941
The Influence of Cortisone-Acetate on some Serum Phosphorus Metabolites in Young		THE PRESIDENT'S PAGE	943
		CORRESPONDENCE:	
		Criticism of Revised Psychopharmacological Survey	946
		Book Reviews and Reviewers	947
		OFFICIAL REPORTS:	
		Report of the Nominating Committee	948
		NEWS AND NOTES	949
		BOOK REVIEWS	953

MAY, 1961

EVOLUTION OF MENTAL HEALTH PROGRAMME IN TAIWAN. <i>Tsung-Yi Lin</i>	961	and M. G. Sandifer, Jr.	1030
LIMITATIONS OF MEDICAL TRADITIONS ON COMMUNITY MENTAL HEALTH PROGRAMS. <i>L. C. Kolb, V. W. Bernard, R. E. Trussell, M. W. Bernard, B. P. Dobrenwend, B. Kobisaat, and R. Weiss</i>	972	Fluphenazine in Private Psychiatric Practice. <i>Laura E. Morrow</i>	1031
EFFECTS OF CHEMICAL STIMULATION TO DISCRETE BRAIN AREAS. <i>Robert G. Heath, and Floris de Balbian Verster</i>	980	Improving Insulin Therapy with Neostigmine. <i>Amedeo Esposito, and Irving D. Rosenberg</i>	1032
SENSORY HABITUATION AND DISCRIMINATION IN THE HUMAN NEONATE. <i>Wagner H. Bridger</i>	991	The Effect of Meprobamate (Miltown®), RO 1-9569/12 (Niltoman®), and SCH-6673 (Tindal®) on the Odor of Schizophrenic Sweat. <i>Kathleen Smith, and Alfonso Corzo Moody</i>	1034
COMBINED DRUG THERAPY OF CHRONIC SCHIZOPHRENICS. <i>Jesse F. Casey, Leo E. Hollister, C. James Klett, Julian J. Lasky, and Eugene M. Caffey, Jr.</i>	997	A Failure to Find Distinctive Personality Features in a Group of Obese Men. <i>Norris Weinberg, Myer Mendelson, and Albert Stunkard</i>	1035
BEHAVIORAL CHANGES IN PATIENTS WITH STROKES. <i>Montague Ullman, and Arno Gruen</i>	1004	Dystonic Reactions Produced by Tranquilizers. <i>Solomon Hirsch, and Doris L. Hirsch</i>	1037
ROLE: A CONCEPT LINKING SOCIETY AND PERSONALITY. <i>William F. Knoff</i>	1010	Combined Tranlylcypromine-Trifluoperazine Therapy in the Treatment of Patients with Agitated Depressions. <i>Stanley Lesse</i>	1038
THE OBSESSIONAL PERSONALITY AND OBSESSIONAL ILLNESS. <i>I. M. Ingram</i>	1016	CASE REPORTS:	
CARDIAC ARREST AND ELECTROSHOCK THERAPY. <i>Genevieve A. Arneson, and Tarver Butler</i>	1020	Chlordiazepoxide Hydrochloride (Librium®) and Jaundice. <i>Joseph Cacioppo, and Sidney Merlis</i>	1040
IMPROVEMENT—REAL OR APPARENT? <i>Ruth Powell Kane, and Guinevere S. Chambers</i>	1023	A Case of Inhibition of Ejaculation as a Side Effect of Mellaril. <i>Harbhajan Singh</i>	1041
PSYCHIATRIC FACILITIES IN CHICAGO. <i>Francis J. Gerty</i>	1028	COMMENTS:	
CLINICAL NOTES:		Eugenic Sterilization Legal in 28 States	1043
The Effect of Monase in Depressive States: A Multi-Blind Study. <i>H. Azima, Dorothy Arthurs, and A. Silver</i>	1029	CORRESPONDENCE:	
A Study of Combined Therapy with Stelazine and "Parnate" (SKE 385) in Chronic Anergic Schizophrenics. <i>W. J. Buffalo,</i>		The Common Frontiers of Psychiatry and Law	1044
		Psychoanalytic Methodology	1045
		Recurrent Psychotic Depression Associated with Hypercalcemia and Parathyroid Adenoma	1045
		Social Psychiatry	1046
		NEWS AND NOTES	1047
		BOOK REVIEWS	1051

JUNE, 1961

PROCESSES OF "SPONTANEOUS" RECOVERY FROM THE PSYCHONEUROSES. <i>Ian Stevenson</i>	1057	KINETIC CHILDREN. <i>Leon Eisenberg, Anita Gilbert, Leon Cytryn, and Peter A. Molling</i>	1088
CERTAIN SOCIOCULTURAL AND ECONOMIC FACTORS INFLUENCING UTILIZATION OF STATE HOSPITAL FACILITIES IN INDIANA. <i>John Nurnberger, Marvin Zuckerman, James A. Norton, and H. M. Brittain</i>	1065	A RESEARCH MODEL FOR THE EVALUATION OF THE EFFECT OF PSYCHOPHARMACOLOGICAL AGENTS. <i>David W. McCreight, Nolan D. C. Lewis, Morris Reby, and Joseph M. Tobin</i>	1094
THE FAMILY AS A POTENTIAL RESOURCE IN THE REHABILITATION OF THE CHRONIC SCHIZOPHRENIC PATIENT: A STUDY OF 60 PATIENTS AND THEIR FAMILIES. <i>Anne S. Evans, Dexter M. Bullard, Jr., and Maida H. Solomon</i>	1075	CERTIFICATION IN CHILD PSYCHIATRY UNDER THE AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY. <i>Frederick H. Allen</i>	1098
LOS ANGELES SUICIDE PREVENTION CENTER. <i>Robert E. Litman, Edwin S. Shneidman, and Norman L. Farberow</i>	1084	A STUDY OF THE RELIABILITY OF THE MENTAL STATUS EXAMINATION. <i>N. Rosenzweig, S. G. Vandenberg, K. Moore, and A. Dakay</i>	1102
THE EFFECTIVENESS OF PSYCHOTHERAPY ALONE AND IN CONJUNCTION WITH PERPHENAZINE OR PLACEBO IN THE TREATMENT OF NEUROTIC AND HYPER-		A DAY CARE CENTER IN A STATE HOSPITAL. <i>Leon A. Steiman, and Robert C. Hunt</i>	1109
		THE STUDY OF MOTOR DEVELOPMENT IN INFANCY AND ITS RELATIONSHIP TO PSYCHOLOGICAL FUNCTIONING. <i>Barbara Fish</i>	1113

CLINICAL NOTES :

- Study of Butyrylperazine (Bayer 1362). *Herman C. B. Denber, Elizabeth Ross, and Paul Rajotte* 1119
- Preliminary Report on Taractan. *Jane E. Olzman, and Samuel Friedman* 1120
- A Pilot Study of the Effects of Pathcole, A Serotonin Antimetabolite on Schizophrenic Patients. *G. Vassilion, E. Costa, G. Brune,*

Clara Morpurgo, G. Ayala, H. E. Himwich, and Vasso Vassilion 1121

COMMENTS :

- National Association for Mental Health Golden Anniversary 1123

NEWS AND NOTES 1124

ANNUAL INDEX :

- Subject Index 1129
- Author Index 1143



William Malamud

PRESIDENTIAL ADDRESS

PSYCHIATRIC RESEARCH: SETTING AND MOTIVATION¹

WILLIAM MALAMUD, M.D.

Just a little over a year ago my distinguished predecessor handed over to me the gavel of the President of the American Psychiatric Association symbolic of the high honor of this office, and the important responsibilities that are implied by it. I must confess that at that time, having come up through the ranks, so to speak, and having had the opportunity to appreciate the full implications of the functions of the President, the feeling that was uppermost within me was that of a realization of the responsibilities of this office and a profound hope that I would be able to prove worthy of the confidence that you have placed in me.

Today I come before you almost at the completion of this mission and, in reporting on the developments during the year, I have the satisfaction of knowing that, to the best of my ability, I have endeavored to further the highest interests of the Association and that this year's experience has been the most instructive, as well as the most stimulating, in my whole professional career.

I am deeply grateful to you for having bestowed this honor on me, for the confidence you have placed in my ability to carry these responsibilities and for the opportunity that you have given me to participate actively in the functions of this Association, of which I have now been a member for over 30 years. Added to this is a deep appreciation of the fact that both through election and appointment, you have provided me and this Association with a team of workers, including the officers, Executive Committee, representatives of the Assembly, members of staff and Committees, who have worked most enthusiastically and efficiently to assure the progress that has been achieved during the year. •

An important feature of this meeting is the opportunity it offers to all of us to take stock of what has happened during this period, to appreciate the progress that has been made by the Association and the profession of psychiatry, and on that basis to project plans for the future. I thought, therefore, that it would be most appropriate to undertake at this, the opening session, an analysis of events that have taken place, and to appraise their significance.

Our Association has grown rapidly, both in size of the membership and the complexity and breadth of its activities, and it seemed to me that it would be neither feasible nor necessary to attempt to cover all of these activities in the present statement. Instead of this, I would like to concentrate on what I consider to be the most important events that have taken place—events that are indicative of progress in the course of the general process of growth. Some of these have developed gradually, but have come to a climax at this time. Others have been initiated during this year through your efforts and those of the officers that you have elected. I feel that in lifting these items out for emphasis, their importance can be more effectively brought to your attention so that they may receive the consideration they deserve. The order in which they are presented does not imply degrees of greater or lesser importance. All of them represent milestones in the history of the Association.

1. *Definition of the functions of the Medical Director.* The establishment of the position of the Medical Director in 1948 and with it the organization of the Central Office and the purchase of the home of the Association were the results of an appreciation of the gradually growing complexity of our profession and the need for a central focus which would serve to coordinate the great variety of existing activities

¹ Presidential Address delivered at the 116th Annual Meeting, American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

and the launching of new ones called for both by our needs and our potentialities. The prospects of the great contributions inherent in this new phase in the development of the Association generated much enthusiasm, which was further nurtured by the broad vision, lofty imagination and unbounded energy so typical of Dan Blain and the leadership he provided both for the Association and his staff.

At the same time, however, the definition of the scope and content of this position has grown as a sort of patchwork, rich in ideas, but continually presenting need for clarification, and neither the membership nor the office staff were quite certain as to what it included. Questions began to come up as to lines of communication and authority, responsibilities and prerogatives, relations with the officers, Council, Assembly of District Branches, staff personnel, Committees and allied professional associations. This naturally resulted in some confusion, criticism and uncertainty, and when the present Medical Director came in, it became evident that a systematic definition of the functions of this office, with all that it implied, was essential both for him and the Association.

During this year we have become acutely aware of such a need and your officers, Executive Committee and Council, with the cooperative assistance of the Medical Director and his staff, have formulated a definition of this position and this will be presented to you in the Secretary's report. It is highly important that you give it your serious consideration, making use of it as a basis for operation at this time, but permitting flexibility of interpretation and possible change as time and circumstances dictate. The great importance of a clear definition of this office is obvious, particularly in view of the fact that it has come to represent the main focus of a continuum in an organization which by its nature is subject to constant change.

2. *The Reorganization of the Central Inspection Board.* As I view the developments in this Association during the period of my membership, I cannot think of any single development that has taken place in the past that surpasses, and very few that equal the important contribution that has

been made by the Central Inspection Board in improving the care and management of the mentally ill. This applies particularly to conditions in the public hospitals and the establishment of appropriate standards as guides for our own practice and for presentation to other medical groups and to the public in general.

Although all of us through the years have contributed to the process of its development, I think it can be said without any reservation that its establishment as a successful agency and its subsequent achievements were made possible primarily by the great devotion, leadership and persistent efforts that Dr. Tarumianz has invested in it, and the support he received from the members of his Board. Frequently, in the face of what appeared to be almost unsurmountable obstacles and resistance, he forged ahead most courageously with the result that now the first objective of this project has been reached. The establishment of desirable standards and the manner in which clinical facilities can be adequately inspected and their standards raised, albeit within realistic considerations, has been successfully demonstrated not only to our membership, but to the medical profession and the public. The Council has taken into consideration the fact that provisions have been made for including psychiatric representation on the Joint Accreditation Board, and has formulated a plan for reorganization of the Central Inspection Board, which is in keeping with new developments and which will be presented to you as part of the report of Council actions. On another and more festive occasion during this meeting, the Association will present to Dr. Tarumianz in a more eloquent way the recognition of the debt of gratitude we owe him. At this time, however, I do want personally to express our feeling of gratitude to him and his Board for a great contribution and our hope that we will continue to have the benefit of his wisdom and experience in the implementation of the new plan.

3. *Graduate Education in Psychiatry.* Over the past few decades most significant progress has been made in the better understanding of mental illness on the basis of the introduction of new methods of diag-

nosis, treatment, prevention and rehabilitation. All of these have led to a much more adequate, but also vastly more complex structure of dealing with these problems and, therefore, have made more obvious the rapidly increasing gap between knowledge acquired and the availability of manpower to implement the application of this knowledge to the problems of the mentally ill. With this came the recognition of the great need for an increase in the ranks of qualified workers. A great deal has been done in this direction, both within the Association and in interpreting our needs to the public in general.

The passage and implementation of the Mental Health Act and the great contribution that was made by the National Institute of Mental Health in this direction, the Ithaca conferences (1, 2) and a number of similar events, indicate the progress that has been made. In spite of these, however, and in spite of the rapid rate of increase in qualified personnel, there is still a wide gap between tools that have been developed and the availability of personnel to apply them. This involves not only the actual number of well-trained and qualified psychiatrists and workers in allied disciplines, but, what is at least of equal importance, the question of their distribution, particularly as it affects the staffing of public hospitals.

A number of us in this Association have taken cognizance of this situation and upon recommendation of the Long Term Policy Commission, which was formulated at the divisional meeting in Detroit, steps have been taken to develop plans for coming to grips with it. As a result of that, the Council has directed your officers to proceed, under the direction of my able successor and good friend, Dr. Robert Felix, to set up plans for a series of conferences, the purpose of which will be a frank appraisal of the factors responsible for these conditions and the formulation of recommendations of how to deal with them. Dr. Felix has entrusted the planning and steering of such plans to a committee that he selected under the co-chairmanship of Dr. Walter Barton and myself, and which will hold its first session at this meeting. It is obvious that the factors that influence both the general sup-

ply and the specific distribution of personnel are many and varied. Because of this it will be important to secure adequate representation of the variety of interests, experience and specific needs in the composition of participants in these conferences: directors of training centers as well as hospital superintendents; teachers as well as administrators. Furthermore, in the attempt to provide for more equitable distribution it will be necessary to emphasize not only the greater needs that exist in certain areas, such as for instance, the public hospitals, but also the great potentialities that are to be found in these areas, particularly in view of developments during the last few years.

4. *Development of Closer Relations between the American Psychiatric Association and Other Groups.* The rapid growth and increasing scope of our profession has brought to our attention the great need for adequate recognition by, and closer affiliation with, other professional and citizen organizations, particularly the general medical profession. The establishment within the structure of the American Medical Association of the Mental Health Council under the chairmanship of Dr. Leo Bartheimer and the development of similar committees in state medical societies, clearly indicate the progress that has been made towards the achievement of this goal. They have brought us into closer association with general medicine and its various specialties. A most encouraging manifestation of this trend was provided by the Hershey Conference last fall held under the sponsorship of the Committee on Scientific Activities of the American Medical Association. A major portion of this Conference was devoted to a discussion of the relationship between medical specialties and the American Medical Association. Both our Association and the Mental Health Council were represented and participated actively. The need for more adequate knowledge of psychiatric methods and principles in the general practice of medicine seemed to meet with wide agreement and this was also true in regard to the application of medical principles in the practice of psychiatry. It was also heartening to observe the genuine interest in the effort to understand the factors that have contributed to

isolation and to the need for the development of means to overcome them.

5. Closely related to this is the progress that has been made in regard to our relationship with psychology. I think it is safe to say that the difficulties that have been encountered in this area, particularly recently, were in a large measure due to a lack of adequate understanding and a consequent failure in communication. With the growing appreciation of this fact, earnest attempts have been made on both sides to remedy the situation and during this year we were particularly fortunate to have the wise counsel and energetic leadership of Dr. Felix in dealing with the problem. Both by training and scope of interest, he is especially well qualified to deal with it and throughout the year he has worked in close cooperation with the Committee on Relations with Psychology and succeeded in providing a good foundation for a solution. More recently the American Medical Association has invited us to a series of conferences to discuss our relationship with psychology as part of the general topic of the relationship between medical and paramedical professions. Dr. Felix, aided by Dr. Handler, Chairman of the Committee on Relations with Psychology, has participated in two such conferences and has represented us in a most statesmanlike manner. He has worked hard and wisely in promoting the best interests of the Association and we are looking forward to further progress under his guidance next year.

6. *Contributions of the Commission on Principles and Position on Current Issues in Psychiatry.* The rapidly increasing scope and wide ramifications of the activities of the psychiatric profession have led to the need for a broad but definitive statement on fundamental principles and on our position in regard to current issues in matters relevant to psychiatry, a statement which could be used in presentation to the public of the policy of our Association. In the past whenever the need for a statement of this type occurred it was presented by psychiatrists invited as individuals. It is true that in most cases the men called upon to present such statements, did so in a highly satisfactory manner, but whether or not it was in keeping with the general

opinion of the membership, it still remained essentially the statement of an individual. The Commission that was appointed for this purpose some time ago, has, under the chairmanship of Dr. Braceland and in consultation with the officers and Council, formulated a most appropriate statement of our policy. Since then Drs. Braceland and Ewalt have represented us on a number of occasions and each time they have successfully demonstrated the effectiveness of establishing a definitive policy and having it presented by experts who speak officially for the Association. It is especially important to keep this in mind when we are called upon to express our views on the need, for, and potentialities of such organizations as the National Institute of Mental Health and similar state and local institutions.

7. *Psychiatric Education in Medical Schools.* The fact that psychiatry has proven its status as an integral part of medicine and that, therefore, it must be given an adequate position in the medical curriculum seems to be so generally accepted that there should be no question as to the role it should play in teaching medical students. Nevertheless, the emphasis placed on the teaching of psychiatry as expressed, for instance, in the amount of curricular time allocated, still shows wide variations between individual schools, and this is also reflected in the degree of emphasis on psychiatry in the various medical board examinations. The National Board of Medical Examiners, which has quite justifiably come to represent the accepted standards for medical education, was one of the first to take cognizance of the importance of adequate psychiatric knowledge in the practice of medicine, and has begun to make provisions for the inclusion of psychiatry in the setting up of the examinations. Until now, however, this was limited to a few questions inserted in the Part Two examinations in medicine, pediatrics and public health. These were prepared by psychiatrists appointed by the Board and both Dr. Romano and Dr. Gaskill, who have served in this capacity, have represented psychiatry so effectively that during this year the Board has invited a group of psychiatrists under the chairmanship of Dr. Gaskill to

discuss the feasibility as well as desirability of setting up a separate examination in psychiatry, which is to be added to the examinations in the other five subjects in Part Two. The Committee has expressed itself in favor of this and the Board has approved this recommendation and has instructed our Committee to proceed with the setting up of such an examination for 1961.

This represents a very important development in the process of integrating psychiatry within medical education, with a beneficial impact on both. It will serve as a further emphasis of the need of sound psychiatric knowledge in the everyday practice of the physician no matter what branch of medicine he is in. At the same time it will help to accentuate the importance of teaching psychiatry to medical students, not as an isolated specialty, but as an essential part of a medical education.

8. Finally, I wish to call your attention to the important developments that have taken place in the area of *Psychiatric Research*, and to point out the fact that, although the progress that has been made in this area in recent years has been most impressive, we have just barely scratched the surface, and it is here that the Association is faced with both the greatest needs and the most promising potentialities. At the same time, I think that we are justified in saying that research is a basic prerequisite for any plans for the future if we are to attain the objectives spelled out in our Constitution. For the development of adequate methods of evaluation and treatment of mental illness depends upon scientific studies of the nature of disease and the manner in which it interferes with adjustment. Similarly, the organization of systematic programs of prevention depend upon the discovery, through research, of the causes of these diseases. This applies also to programs of rehabilitation, for it is essential to understand the nature of the residual defects if we are to institute measures which will adequately compensate for them.

Furthermore, if we are to establish appropriate standards for the care and management of the sick, these will have to be developed on the basis of adequately de-

signed and controlled studies of their validity. Finally, if we are to undertake the education of those who are to carry out these procedures or of the public in general, we will have to test through research the validity of the precepts that we plan to impart to others. All this must be kept in mind as we attempt to take stock of what progress has been made and what we can do to help in furthering it.

I do not purpose to undertake here a review of the present status of research in this field, or to attempt to point out the important advances that have been achieved during the current year. These I am sure will emerge in the course of the program of this meeting in which research reports play a very important role, just as they have in preceding programs. Suffice it to say that in my travels throughout the year both on behalf of the Association and as Director of Research of the National Association for Mental Health, I have found throughout the country a high degree of interest and activity in research in the whole spectrum of disciplines relevant to the study of human behavior and experience, both in health and in illness. Throughout all this one can discern the emergence of an encouraging sense of accomplishment and a recognition of what research has already contributed to a better understanding of mental illness and the manner in which this knowledge can be practically applied to dealing with the problems at hand. It is true that the degree of enthusiasm of individual workers varies from the one extreme of claims of exciting breakthrough, to the other extreme of skepticism and over-cautiousness. In most instances, however, the sense of accomplishment is adequately balanced by a healthy recognition of the magnitude of the task, with the resulting determination to tackle it courageously, but also realistically.

"What can the Association do to foster and promote this work? Some years ago, Drs. Whitehorn and Zilboorg, representing the Research Committee, of which Dr. Whitehorn was the Chairman, presented a review of the trends in American psychiatric research at that time(3), and I find that the basic principles expressed then could well serve as guide lines for our Association today. The question posited was "What can

the Association do in promoting activities of this type (research) that would be in keeping with the goals and the interests of the Association?" They went on to say that: "We do not believe that this Association would wish their Research Committee ever to attempt to control or direct various investigations; but we do believe that they would wish us to encourage research efforts and help in whatever way might be found profitable to facilitate the interchange of them among research workers." And it is with this in mind that they proceeded to set forth a series of recommendations.

The Association certainly cannot undertake the control or direction of research investigations, nor can it be expected to act as a financing or sponsoring agency. This must be left to those who have the wherewithal to provide the funds and facilities that are essential. The Association can, however, play an important role by stimulating the interest of its members and others, particularly younger workers, and by bringing its influence and prestige to bear upon those who are in a position to support research, to provide the adequate facilities in which effective work can be carried out. Such encouragement and facilitation can be achieved through two principal functions: The assurance of adequate settings and the fostering of appropriate motivation.

Insofar as the setting is concerned, many of the recommendations proposed in that earlier statement have actually been implemented. Federal and state agencies, private foundations and citizens organizations have provided increasing funds to finance the rapidly growing number of projects in this field. These have provided for the support of personnel, for materials and apparatus and even for construction of research buildings. The Association has played an important role in making this progress possible through the activities of a number of its Committees, but a great deal more remains to be done. In the first place there is now, and there will be in the future, a continually increasing need for funds. In spite of the generous financial contributions that have been made, particularly during the last few years, and actually because of the successful achieve-

ments that were made possible by these funds, the scope of the problem has become much greater. New knowledge has brought up more questions, and new methods devised have provided us with more adequate tools in search for answers.

Secondly, there is need for reorientation in regard to the distribution of the funds that are made available. With the increasing complexity of research methodology and scope it has become obvious that our greatest need is for adequate manpower, which means a considerably stepped up recruiting and training program. This means also that some portion of the funds hitherto used for direct research projects, would have to be used for training of scientists. Another shift in distribution should be considered in regard to the type of institution, including the background of its staff and the facilities available, that can be considered most likely to make valuable scientific contributions. It is quite natural, and perhaps justifiable, to determine this on the basis of past performance. But frequently an institution or an individual worker with the history of a signal contribution in the past, will receive priority consideration even if the grant is for work in an area quite different from the one in which competence has been demonstrated. This is especially likely to occur if the choice lies between well-known, experienced scientists and younger ones who have not yet established their reputation, or between institutions with "basic research" traditions, as compared with more recently initiated programs that are more likely to be clinically oriented. In many cases this is justified and certainly reduces the hazards of a gamble. Just as frequently, however, one fails to consider that success in one branch of research does not necessarily imply efficiency and understanding of all of them; that ready availability of pertinent material (particularly clinical) adequately evaluated is as important as the quality of scientific methods, and that in medicine clinical insight and experience are basic in the study of disease processes.

One must also keep in mind the current tendency to set up priorities and concentrate all efforts on some special subject at the expense of all others. This may be deter-

mined by the emergence of some problem which is of particularly pressing concern to society, or it may be conditioned by the claim of a "breakthrough" actual or spurious, such as reported discoveries of "ultimate causes" or "universal cures." In either case, the general effects can be equally disturbing. It leads to a frantic scurrying to get on the band wagon, particularly in situations where one must take into account the vacillations of public opinion.

Less frequent but likely to be just as unfortunate is the tendency of the skeptics to react to all new ideas or findings hypercritically and in their concentration on "objective criticism" impede the development of new ideas, even if they are promising, and discourage investigations based upon them. Research, if it is to lead to progress, must take into consideration the need for a certain degree of flexibility which would assure freedom of choice not only in regard to the particular aspect of the problem which is in keeping with the specific interests and skills of the individual worker, but also the design and methodology which he considers to be the most adequate and applicable to the particular questions he posits. It is true that the design and methodology used in testing the hypotheses as well as the manner in which data are recorded and analyzed and conclusions are arrived at, must follow certain fundamental criteria of reliability, which will assure the maintenance of a critical attitude and avoidance of wishful thinking in the interpretation of the data. It is equally important, however, to remember that the specific nature of design and methodology may differ in their applicability to the variety of disciplines involved. In the first place different sciences (such as, for instance, the social as compared with the physical) have developed at different rates of progress, so that some of them, at least as regards their objectivity and reliability in scientific research, are not quite as far ahead in the perfection of techniques and criteria as some others are. This may be due to the fact that some sciences of human behavior because of their relatively greater complexity have not had as much of an opportunity to develop as rapidly as others and, therefore, lend themselves less

easily to exact standards of measurement. In such areas it is well to accept reality considerations, and, while always striving for improvement in the quality of design and technique, we have to make use of crude instruments, where more refined ones are not as yet available.

Secondly, it is important to keep in mind that the different sciences of human behavior may be functioning in different universes of discourse and may not be subject to uniform criteria of standardization and measurement. This means that no matter how nearly perfect a given technique may be in one science, it may not ever become applicable to the study of phenomena in another one. Some of the methods, for instance, used in the study of emotions or feelings may never lend themselves to the standards of measurement that are useful and utilizable in biochemistry.

The importance of maintaining an attitude of flexibility in the process of evaluating the adequacy of a proposed scientific study, applies to all phases of research, but is particularly indicated in the behavioral sciences, because of the greater spread of applicable techniques. And yet during the last few years we have witnessed a growing trend of over-emphasizing the value of "exact" methodology and uniformity of standards. This trend, which could be characterized as a "cult of objectivity," has already had an important influence on psychiatric research. It is true that in its emphasis on critical judgment and valid criteria, it has helped to curb unrestrained flight of imagination and sloppy methodology. But the over-glorification of objectivity and the insistence on rigidly single standards of acceptable methods has resulted in a concentration on certain phases of the science of human behavior at the expense of other very important ones.

These are but a few of the factors that are operative in the setting of research and can have an important impact upon both the scope and ultimate value of this fundamental phase of our activities. Our Association should be constantly alert to these developments and their implications, and while not attempting to control or direct research, it should, as a professional organization have a well defined policy in

regard to the fundamental issues and, through its appropriate Committees and Commissions, be prepared to present it as a guide for action where it is indicated.

So far my discussion of what the Association can do to promote research dealt with the character of the setting and the role it plays in determining the degree of effectiveness of this work. We have assumed that there always have been and that there always will be certain persons who devote some or all of their interests and time to research. If, however, we are interested not only in facilitating the activities of those who are already engaged in this work, but also in stimulating an ever increasing number of persons who will be likely to develop and maintain an interest in it to begin with, we will have to consider the question of whether such persons, either through nature or nurture are impelled to do so by some basic need or urge for probing the unknown. In other words, can we speak of *motivation* as an essential or even primary determinant in the choice of research as a life work? If this is so, then the setting is of importance primarily in a measure as it either facilitates or impedes the effective fulfillment of such an urge. Furthermore, if motivation is accepted as an important and fundamental factor in determining a primary interest in research, the Association should strive to stimulate and foster it amongst its members and others who could be attracted to it.

In medical (including psychiatric) research, particularly that aspect of it which is referred to as clinical investigation, we have ample demonstration of a positive answer to this question. In most instances the clinical investigator is motivated by very definite needs, usually consciously appreciated. It is true that these needs may be based on a variety of practical considerations, such as the wish for recognition and status, the pressure in regard to promotion or retaining of a status quo in a department and others of a similar nature. More frequently, however, than some skeptics will admit, the motivation stems to a greater or lesser extent from the same source as does the practice of medicine in general, namely, the urge to be more effective in the treatment of illness. This is

particularly true in the admittedly rare instances of fundamental contributions. Semmelweis, Freud, Pasteur or Fleming, confronted by certain life destroying processes in nature, and finding themselves unable to counteract them by existing methods, have taken up the challenge of nature and have turned some of nature's own weapons against the disease producing causes. In other words, research of this type represents a purposeful activity whereby man, finding himself at the mercy of a variety of random processes in nature that tend to produce disease, undertakes a systematic and orderly search for methods which will control or eradicate the life destroying processes.

In discussing the question of motivation, however, we have to reach out beyond the bounds of what is described as clinical investigation. The great progress that has been achieved in psychiatric research in the last few years has in a large measure been due to an extension of its scope to all of the basic sciences relevant to human behavior, more particularly those of physiology and biochemistry and this has resulted in a crossing of boundaries. Thus many studies that have started out on an empirical level of the immediate practical applicability of new methods of treatment (such as shock treatment and pharmacotherapy) have brought up the need of ascertaining their fundamental mechanisms through research in physiology and biochemistry. Similarly, an impressively large number of workers in the basic sciences have, in the course of their studies, come to recognize the applicability of their findings to the understanding and treatment of disease and have extended their work in that direction. Actually we find that the core of psychiatric research at the present time is to a large extent made up of a combination of both clinical and basic investigations without any clear cut line² of demarcation between the two. This means, therefore, that in posing this question and its implications in regard to the clarification of our objectives, we cannot limit ourselves to any one phase of this work, but must also ask whether the concept of motivation, which was postulated as operative in clinical investigations, is also applicable to

the whole scope of psychiatric research and, indeed, to science in general.

The question is, of course, highly controversial and admits of no universally acceptable answer at this time. The prevailing view of men of science has been that "basic" science deals with matters of fact and has no place for values. It describes facts and their interrelationships, which may lead to conclusions, but admits of no goal-directed motivation and involves no moral imperatives. This view has been challenged on a number of occasions and has been presented particularly convincingly in a recent statement by R. B. Lindsay, professor of Physics in Brown University, under the title of "Entropy Consumption and Values in Physical Science" (4).² He takes his point of departure from the statement that science is a method for describing, creating and understanding of experience. Whereas description may be regarded as passive and essentially impersonal, creation (devising of experiments) and understanding (building of theories) are active and personal, and imply individual motivation on the basis of an intrinsic urge. In terms of experience this urge is akin to Kant's Categorical Imperative and its nature is suggested by the principles of Thermodynamics. Professor Lindsay, therefore, suggests that one may call it the *Thermodynamic Imperative* and that it may be regarded as urging "all men to fight always as vigorously as possible to increase the degree of order in their environment so as to combat the natural tendency for order in the universe to be transformed into disorder, the so-called second law of thermodynamics."

As stated above this concept is derived from a consideration of the theory of Thermodynamics, and the basic principles with which it operates, namely, its first and second laws. The first law is that of the conservation of energy, or the fact that through all its possible transformations the energy of the world remains constant. The second law is that of *Entropy*, according to which there is always a loss of available energy in the course of energy transforma-

tion, and a constant trend in all systems to move from a state of order to one of disorder. Generally speaking as applied to nature as a whole, this law appears to be inexorable, inevitably leading to a state of complete randomness and lack of available energy, eventually to reach a dead level of temperature.

In some specific instances, however, the trend may be reversed, leading to a decrease or consumption of entropy and the emergence of order out of disorder. The most striking is that manifested by the living organism, where we find that from a random collection of atoms there is the synthesis of cells which in turn arrange themselves in the most intricate orderly system of an organism. Life and reproduction, therefore, can be regarded as an example of entropy consumption. Another example is that observed in the function of the human nervous system as manifested in the processes of thinking and communication, both of which are characterized by a progression from randomness to order, and which show their highest expression in scientific research. No one will deny that in this process the scientist is impelled by the urge to acquire more knowledge, more understanding and greater orderliness, but this also coincides with a decrease in entropy. In the case of life and reproduction this urge is an instinctual one. In the case of research it is a consciously appreciated need to extend the light of knowledge and orderly understanding into the mysteries of the unknown, and in this way to take up the challenge of nature and thereby check, even if only temporarily and locally, the inexorable progress of entropy.

The concept presented by Professor Lindsay is both thought provoking and inspiring. We find its parallel in philosophy in Kant's Categorical Imperative, in Plato's idea of the continuous striving of man for the Agathon or the principle of the good and the just and in Spinoza's statement that "there is but one end for the sciences to which they all must be directed, namely, to attain the greatest possible human perfection." In medicine, more specifically psychiatry, we find this concept expressed in one of Freud's most profound contributions, *Beyond the Pleasure Principle*, in

² I wish to acknowledge gratefully the permission given by the Editor of the *American Scientist*, to use this material in the present publication.

which the idea of entropy consumption is represented by the antithesis of the Life (reproductive) and Death (ego) instincts(5).

The fundamental relationship between Lindsay's idea of a thermodynamic imperative and the nature of the motivation postulated as basic in clinical research is obvious, both of them finding their highest expression in Schweitzer's principle of "reverence for life." The fostering of this principle and the establishment of a setting in which it can be most effectively implemented is to be regarded as a fundamental objective of our Association.

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DR. WILLIAM MALAMUD
Eighty-sixth President—1959-1960

A BIOGRAPHICAL SKETCH

BERNARD J. ALPERS, M.D.¹

By training and choice, it was inevitable that Dr. William Malamud should become concerned with the mind and its problems. With the wisdom of retrospect, it is possible to follow his development to its fruition in psychiatry, and to wonder how any other field of medicine could have attracted his particular talents. Even the influences of his early life, long before his college and graduate training, were directed toward his eventual fulfillment.

He was born on May 5, 1896, in Bes-sarabia, which had a mixed population and at different times in its history alternated between being a province of either Russia and Roumania. He came to Canada in 1911 at 15 years of age. His subsequent development and accomplishments are in the finest traditions of freedom. He had no knowledge of English when he came to Canada, and no public school instruction until he entered McGill University in 1916. Prior to this he received private instruction at home, and worked in a factory in order to help support his family. After several years of study and work he took the examinations for a brevet in the province of Quebec, passed these successfully, and was accepted for admission to McGill University in 1916, graduating from its school of medicine in 1921. His graduate training in psychiatry was spent in the Boston Psychopathic Hospital under the direction of C. Macfie Campbell. It is characteristic of his broad approach to the field of psychiatry, that he also spent a year in training in neurology in the Mt. Sinai Hospital in New York. Following this he spent two years in obtaining further grounding in psychiatry, neurology, and philosophy, dividing his time between Hamburg, Heidelberg, Vienna, Zurich, Paris and London.

After his return from abroad Dr. Malamud entered the Massachusetts state hospital system where he served in the

Foxboro State Hospital for three years (1926-1929). Here he not only added to his broad psychiatric experience, but he instituted also a program of research, and gathered around him a group of young and enthusiastic psychiatrists. It became quickly apparent, due to his stimulating influence, that a state mental hospital was a rich source of material for study and research, and that all it required was a group of dedicated men trained in the academic tradition. He left Foxboro in 1929 to become Associate Professor and later Professor of Psychiatry in the University of Iowa (1929-1939), leaving this post to become Clinical Director and Director of Research in Worcester State Hospital (1939-1946). While there he was made Professor of Psychiatry in Tufts College School of Medicine. The Worcester State Hospital is rich in tradition and has graduated many leaders of psychiatry in the United States. Dr. Malamud not only fulfilled this old, but added his own tradition, for it was here that he carried out some of his most interesting researches into the elusive problem of schizophrenia. As was to be expected from his training and background, his approach to this, as to all problems in psychiatry, was eclectic, and his efforts were directed toward elucidation of both mental and physical influences in the disease. He was particularly concerned with the endocrine influences in schizophrenia.

In 1946 he became Professor and Chairman of the Department of Psychiatry in Boston University School of Medicine, and Chief of the Psychiatric Service, and later Psychiatrist-in-Chief of the Massachusetts Memorial Hospital. In 1958, he left this post to become Research Director of the National Association for Mental Health, a post which he holds at the present time.

INFLUENCES IN DEVELOPMENT

This, in brief, represents the barest of outlines of the professional development of

¹ 11 49th St., Philadelphia 39, Pa.

a psychiatrist who from the beginning of his career was recognized by his colleagues and teachers as one who was destined to scale the heights, and who has now been honored, after a long career in teaching and research, with the Presidency of the American Psychiatric Association. His influence as a teacher has been felt not merely as an expositor, a role in which he excels, but to a much greater degree in his eclectic approach to a field which is rent asunder by many divergent and often conflicting viewpoints, not only as regards psychodynamics, but in the more practical field of treatment. He represents a rare combination of broad academic perspective, skill in teaching, and the ability to apply in treatment what it is so easy to teach. The many years spent in the study of hospitalized and non-hospitalized patients have provided him with knowledge of mechanisms and of their application in the treatment of the sick, and have matured a feeling for his fellowman which is apparent in all his human relationships. Psychiatry, more than any other field of medicine, is composed of many divergent groups. Perhaps this is inevitable in view of the elusiveness of problems relating to the mind and the emotions, and in particular of those of body and mind. There are many who choose the specific in their approach to psychiatric problems, but relatively few who attempt to envision the whole and to unite what appears to be divergent. Dr. Malamud's great contribution as a teacher is to be found in his eclecticism; his effort to find what is good in the many theories of mind, body and emotion, and to unite where this is possible without damage to facts and practical experience. This approach has come about by means of significant influences in his life and career.

He was raised in a polyglot background which early in his life made him recognize varieties of viewpoints and their nuances. The language in his home was Yiddish, but he spoke and read Russian and Roumanian, since the majority of the population of the province of Bessarabia was a mixture of the two nationalities. He read Hebrew and Aramaic as a student of the Holy Scriptures and the Talmud, under the influence of his uncle who was a Rabbi, and who was responsible for his introduction to Hebrew

and the Talmud. Later he learned English as a young immigrant of 15 years, and to this he added the knowledge of French, acquired while living in the province of Quebec. In his travels abroad he added to his speaking and reading knowledge of German, which was so sound that he was able to read fluently the difficult German of philosophical writings. Languages were easy for him, but though he had a reading ability in all the languages which he learned, more important still was a background in their tradition and history. Those who have had any contact with him can testify readily to the ease with which he acquired and used the many languages which he learned. They have served a utilitarian purpose, but more important than this, they have given him a feeling for the people who use them and for their institutions and traditions. Only a man with Dr. Malamud's impetus for learning would have made use of acquired languages as a means to understanding.

Problems of philosophy and of abstract thought have fascinated him all his life, and it was not mere chance which took him to Karl Jaspers and Ernst Cassirer during his years of study abroad. But before this he was introduced to analytical thinking and to questions of exegesis and relevance in his study of the Talmud. It is difficult to indicate in brief the type of training which this implies. The Talmud is the repository of the great oral traditions of the Hebrew Scriptures, composed of many books and characterized by Rabbinical interpretations of vexatious scriptural passages. The student of the Talmud, young or old, is confronted often with conflicting rabbinical interpretations, and is taught to analyze and to interpret. The result was a training in abstract thinking, in the importance of distinctions and relevance, and in the Scriptures in general. All this was part of Dr. Malamud's background, and it influenced him greatly in his early life, both in regard to content and in the use of his mind. It requires relatively little imagination to predict that a background in the Talmud and its problems and training could lead eventually into the broad field of psychiatry.

His knowledge of Hebrew led to his introduction to the works of the great He-

brew poet Hayyim Nahman Bialik, who was himself a Talmudist and a fine Hebrew scholar. Bialik, who later emigrated to Palestine, was instrumental in the revival of Hebrew as a language, but was critical of some of the rigidity of his Talmudic training. His poetry and the broad scope of his philosophy fascinated Dr. Malamud, but he was also instrumental in creating dissatisfaction with his Talmudic background. It failed to resolve some of his problems, and led to doubt. It was at this point that he discovered Spinoza, who has remained for him the ideal philosopher, just as Bach and Beethoven represent for him the summit in music. He first met Spinoza in a life of him which had been translated into Hebrew, and he was impressed by Spinoza's blameless life, his doubting of orthodoxy and revelation, and by the fact that Spinoza's rejection did not arise out of ignorance, for he was a fine Hebrew scholar and a learned Talmudist. In seeking for a philosophy of life which could reconcile the emergence of religious doubt, Dr. Malamud discovered the pantheism of Spinoza, and adopted his philosophy. His interest in Spinoza led to a break with some of the concepts of his uncle who had taught him Hebrew and Talmud. Spinoza had been excommunicated by his congregation in Amsterdam, and to accept him in any way was unacceptable to an orthodox Jew.

His interest in Bialik's poetry and his discovery of Spinoza, led to the decision that his interest lay in philosophy. While still in Europe he read the ethics of Spinoza carefully, and he regards them today as the finest expression of human strivings. He has continued to study Spinoza, whose theory of the emotions, that body and mind are one, is modern in every respect. It was at this point also that he decided to become a doctor and to concern himself with problems of the mind. He has not failed in this resolution.

In addition to Bialik and Spinoza, Dr. Malamud sought further indoctrination into philosophy when in Heidelberg many years later he spent considerable time with Jaspers and Cassirer, the latter launching him on the road to philosophy in organized fashion. He has been greatly influenced also in his interest in the human mind in the

writings of Dostoevsky and Romain Rolland.

Of his other teachers, among those who have influenced him most has been Bleuler, whose profound and global analytical approach impressed him greatly. He was analyzed by Paul Schilder whose brilliance and versatility he admired, in particular his competence in both neurology and psychiatry. Finally, his days in the Boston Psychopathic Hospital brought him under the influence of C. Macfie Campbell, Professor of Psychiatry in Harvard Medical School. Like all those who had the opportunity to study under him, he admired Dr. Campbell's survey of the total personality, his insistence upon a global survey of the patient's problem, and his skill as a clinician and teacher.

What makes a great psychiatrist is as difficult to define as what makes a great doctor, but given a conspicuous example it is possible to indicate, with broad strokes, what circumstances have conspired to bring this about in the case of William Malamud. For what has emerged in full flower has been a rare combination of the best features of academic knowledge and an exceptional ability to apply these to the vital problems of human beings, catalyzed by warmth and understanding. His early background provided him with the impetus to explore problems of the mind and of abstract philosophy. Whether this constitutes the preferred approach to the field of psychiatry for all is debatable, but for Dr. Malamud it tended to sharpen his mind, and to interest him in a field of medicine which he chose as his own even before his formal medical training began. His approach to psychiatry has remained humanistic, not only in the many disciplines which he has combined in the development of his holistic concept, but in his handling of patient problems. Though he has taken an active part in laboratory research in emotional and mental disorders, his main investigations have been in the broad field of psychopathology as they involve psychological, social and biological factors in human behavior. But psychiatry is, after all, a clinical discipline and its goal is the relief of illness of the human mind and emotions. An understanding of the mechanisms of obsessions and phobias

is of little consequence unless it can be applied to those who suffer with them. In this Dr. Malamud excels, and both his students and colleagues give ready testimony to his skill as a superb clinician.

It may well be that the psychiatrist of the future will be versed in chemistry and physiology, but fundamentally his problem remains that of understanding of human behavior. Regardless of the trends of future

investigations, it will always be presumed that the psychiatrist will reflect as deep an understanding of human needs and motivations as it is possible for humans to acquire. If he can develop his understanding with the broadness and diversification of William Malamud, he will have provided psychiatry with the best possible base for the understanding and care of patients with emotional and mental problems.

CHILD PSYCHIATRY : RETROSPECT AND PROSPECT

LEO KANNER, M.D.¹

On May 19, 1933, at a meeting of the Swiss Psychiatric Association in Basel, Dr. Tramer presented a paper in which he advocated the recognition of a medical specialty devoted to the study, diagnosis, treatment, prognosis, and prevention of the psychiatric problems encountered in children. He discussed briefly the advances made in the investigation of central nervous system morphology, the Freudian and Adlerian emphasis on the significance of infantile experiences, the insights gained from the relatively recent discoveries in endocrinology, the advent of experimental and developmental psychology, and the work emanating from the Pavlovian laboratories. He concluded that a body of knowledge had been assembled which warranted the acknowledgment of a separate scientific concern. He pointed to the necessity of abandoning the traditional position of the profession; academic departments of psychiatry had acted as though children were essentially miniature adults and, therefore, regarded training in adult psychiatry as a sufficient preparation for work with children—if, indeed, such work was included in the scope of professorial curiosity.

The day on which Tramer delivered his address may be registered as the birthday of the term *Child Psychiatry*, introduced by him in its German equivalent as an overall name for the theoretical, investigative, and clinical occupation with deviations from the usual behavior in early life. Tramer imparted to the term the benefit of literary respectability in the title of a journal which, founded in 1934, has just passed the quarter-century mark a few months ago. Also in 1934, an international congress in Paris, the first of its kind, voted, after some initial opposition, for the official acceptance of the term *psychiatrie infantile* as a fitting designation for the new discipline. In 1935, the publication of my textbook, *Child Psychiatry*, helped to win popularity for the name in the English-speaking

regions as a comprehensive, universally employed heading for a large and ramified area of medical activity, taught in universities, practiced in hospitals, clinics, and private offices, contributing to present-day research in the behavioral sciences, and sharing its findings and their practical applications with all agencies dedicated to the welfare of children.

Of course, the same principle still holds as that which is evident in the Biblical account of Genesis: The name of a thing is preceded by its creation. The reality and the concept of child psychiatry were there in the beginning of the 1930's and the appellation suggested for it by Tramer was merely the verbal label for a recognized existence. It took more than a century for this existence to come into full being but, then, what are a dozen or so decades if weighed against the history of human endeavor?

Child psychiatry did not, indeed, arrive on the scene as the unified structure as which it has evolved in our generation. Collections of different shapes and sizes of building stones, for a long time not even conceived as such, were piled up at some distance from each other, then brought haphazardly into casual relationship, and eventually carried together to become parts of an integral edifice. A historian wishing to gain an adequate perspective of these developments can hardly do so without a review of the originally disparate sections and the manner of their convergence.

It is safe to say that any kind of practical effort to do something for behaviorally defiant children began at the start of the 19th century with a desire to find a way to help mental defectives.

The era of emancipation from political and theologic absolutism, the new gospel of the rights of man, the impact of the encyclopedists, and the French and American revolutions had in their wake a spurt of humanitarian reform activities. The ideas about the treatment of the insane, the slaves, the prisoners, the blind and the deaf came in for extensive revision, and each

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group had its vigorous spokesmen. The feeble-minded were not left out. Jean Itard's untiring attempts over a period of 5 years did not accomplish his avowed purpose of transforming the wild boy of Aveyron "from savagery to civilization" but introduced the then novel thought that a combination of physical and educational measures might raise the performance level of intellectually retarded children. Itard's work was taken up by Edouard Séguin who, leaving France as a political émigré, imported the concept and methods to our shores.

It now sounds unbelievable that in the early years of the 19th century there was still nowhere in the world a residential arrangement for the teaching and the medical care of mentally defective children. It was not until 1841 that the quixotic attempts to cure and prevent endemic cretinism led young Dr. Johann Jakob Guggenbühl to open the first such institution on the Abendberg near Basel in Switzerland. His missionary zeal proved so infectious that kings, scientists, philanthropists, and famous writers undertook pilgrimages to the Abendberg, and soon many similar places were founded all over the European continent. One visitor from the United States, Samuel Gridley Howe, was so overwhelmed by what he saw that he suggested the name "Holy Mount" for the Abendberg. He persuaded the authorities of the Commonwealth of Massachusetts to allot \$2,500 annually for 3 years for an "experimental school," which started in October, 1848, with 12 retarded patients in a wing of the Perkins Institution for the Blind. This was the modest nucleus of what is now the large, modern, scientifically conducted Fernald State School at Waverly. New York followed in 1851, Pennsylvania in 1854, Ohio in 1857, Connecticut in 1858, Kentucky in 1860, and gradually all states but two have seen to it that residential facilities were made available for the care of the feeble-minded. Much valuable work has been done in the area of mental deficiency. The old notion of the unitary character of the condition was dispelled when, beginning with Langdon-Down's description of mongolism in 1866, an increasing number of specific syndromes were singled out. This process is still going on, and the time does

not seem too distant when an acceptable etiologic grouping can be envisioned on the basis of neurologic, metabolic, genetic and psychologic characteristics.

This earliest heap of building stones of child psychiatry set a pattern for those which followed, a pattern of self-containment. For a long time, the students of mental deficiency stood alone, both isolated and self-isolating, depending on their own resources. They published their own periodicals, formed their own associations, and held their own conventions. There was a paucity of interchange between them and the representatives of academic psychiatry.

As for the latter, behavior problems of children interested them only as they seemed to fit diagnoses in accordance with the classifications devised for adults. Everything else was kept out of the few monographs on "psychic disorders," "mental diseases" or "insanity" of children. Interest in therapy was restricted by fatalism which saw in the reported disorders the irreversible consequences of heredity, degeneracy, overwork, excessive masturbation, or religious preoccupation. Neither Kraepelin's monumental work nor Bleuler's classical textbook had anything to say about the psychopathology of childhood. The second edition of Ziehen's treatise on the mental diseases of childhood, published as late as in 1926, was a therapeutically sterile translation of adult psychiatry into terms of how much of it one might find in children.

It may be said without fear of contradiction that traditional psychiatry had offered next to nothing to the understanding of the behavior of the individual in the initial stages of his growth. It was around 1900 that the attention of the profession was directed toward early life experiences as possible sign-posts for later neurotic or psychotic maladjustment. Freud abroad and Meyer in this country introduced a dynamic attitude which saw the origins of present trouble in happenings in the past. Mental illness came to be evaluated as a climax of difficulties which had been evolving for a long time as a particular person's reactions to his particular life situation. Biographic exploration became an obligatory part of psychiatric history taking. Biography, if pursued consistently, leads always back to

the days when each patient was a child. Thus, around the turn of the century, psychiatric interest was for the first time directed toward childhood. But even this interest was still chiefly anamnestic, retrospective, historical. It pertained to the early years of persons who at the time of inquiry had already attained adulthood or at least adolescence. Childhood, therefore, was still dealt with as something like an anthology of reminiscences. There still was no immediate psychiatric contact with children. Even Freud, who so clearly understood the influence of early experiences, had his theory of infantile sexuality all worked out and published in 1905, three years before he ever saw any one child professionally, and then only indirectly via the physician father of the now almost legendary *Kleine Hans*. Then followed a decade in which a few psychoanalysts decreed speculative ex-cathedra interpretations on little strangers until Anna Freud, less addicted to ritualistic techniques, taught child analysis as a method of treating real children in real family settings and not merely as bundles of instincts offering themselves for would-be omniscient and tediously repetitious exegesis.

While psychiatrists of both analytic and non-analytic persuasion began to add a limited number of youngsters to their sphere of curiosity, another group, which was in everyday contact with numerous children, had for some time become dissatisfied with the status quo. The breezes of liberalism blowing through central and western Europe had wafted the ideas of Pestalozzi and Fellenberg into the minds of progressive school teachers. The Procrustean methods of cutting or stretching pupils to fit the exact contours of the curricular bed gave way to a search for means of helping individual students incapable of conforming because of physical, intellectual, or emotional shortcomings. In those days, no inspiration could be expected from psychiatrists who for the most part were immured with their patients in the sequestered isolation of mental hospitals or beyond reach in the cloistered aloofness of academic splendor. A group of educators in Austria, Germany, and Switzerland took the initiative and founded the movement of

Heilpädagogik, or remedial education. The contributions made by this group to the study and scholastic treatment of the learning and behavior problems of school children should not be underestimated. This, of course, was not child psychiatry as we know it today but cannot be disregarded as one of the building stones of the emerging specialty.

In fact, it was from the field of education that the impetus arose for the gathering of another important set of building stones. After compulsory school attendance had become an entrenched feature in most civilized countries, the public school authorities in Paris, bothered by considerable inequalities of classroom achievement, turned to Alfred Binet for an explanation of this phenomenon. Binet and his assistants, examining thousands of children of different ages, established a scale which was based on empirically ascertained norms of performance with regard to scholastic ability. With the help of this procedure, it was possible to learn to what extent any one pupil conformed to, or deviated from, the norm or average. The first draft of the scale was made public in 1905; a revision came out in 1908; a third, improved set was presented in 1911, the year in which Binet died. Binet's work set the pace for studies of the natural history of human development, no longer as a matter of abstract arm-chair wisdom meditating about the species as a seemingly homogeneous group but in terms of concrete observations and measurements of real individuals viewed as heterogeneous specimens. There came a multitude of diaries, questionnaires, trait inventories, and test batteries, culminating in the body of developmental psychology.

Children, at long last, had begun to be seen and heard. The rod and the dunce cap ceased being the only resort in attempts to cope with the behavioral nuisances of young nonconformists. The spirit of tolerance which had declared open war on all forms of despotic harshness, brought about a reexamination of the prevailing relationship between the arrived and the arriving generations. In far away South Australia, a number of civic-spirited men and women found the punitive attitude of the courts toward young offenders objectionable;

they succeeded in 1895 in the establishment of juvenile courts in which delinquent children were to be handled separately and differently from adult violators of the law, with an emphasis on rehabilitation instead of retaliation. In 1899, the states of Illinois and Colorado passed similar statutes. Within a decade, juvenile courts began to spring up in all civilized countries. Some of the judges were not satisfied with the job of meting out justice in the form of verdicts and sentences. They wanted to find out *why* the children brought before them had been driven to their transgressions.

It is, at this time, difficult to realize that this mode of inquiry represented a major innovation. Antisocial acts had been regarded by Prichard in 1835 as the results of an innate "morbid perversion of the feelings, affections, and active powers," by Kahlbaum in the 1870's as the manifestations of a "faulty development of the moral fiber systems," and by Lombroso even later as the outcropping of inborn propensities. A major change in the concept of human behavior had to, and did, occur before the times were ripe for the work of William Healy who, discarding the obsolete notions of delinquency as a chromosomally preordained destiny, devoted himself to the study of motivations in the light of the young offender's life situation. The title of his book, *The Individual Delinquent*, published in 1915, indicates a transition from abstract speculation about a nebulous something called delinquency to the concrete occupation with the personalities of specific youngsters and the motives underlying their socially unacceptable performances.

The introduction of the juvenile courts is but one link in a chain of events which had caused the Swedish sociologist Ellen Key to predict that the 20th Century would be known as the century of the child. The first decade witnessed the birth of developmental psychology and, in psychiatry, the shift of focus from the nosographic allocation of supposedly unheralded mental diseases to a search for psychodynamic principles that might explain personality disorders as consequences of unfavorable interplay between the patient and his environment. With this kind of orientation, it

became possible to think in terms of therapeutic intervention and prophylactic interception. The idea of prevention had taken root in 19th-century medicine and had settled in the public mind. The question was raised whether interferences with mental health might be made as accessible to preventive measures as certain inroads on physical well-being had proved to be. This hope found a vigorous advocate in Clifford Beers, whose enthusiasm and organizational talent led in 1909 to the creation of the National Committee for Mental Hygiene.

The mental hygiene movement had for its slogan the prevention of insanity and delinquency. For this, there could be no better starting point than the appearance of the earliest signs of misbehavior in the formative years of childhood. Hence, it became a part of psychiatric responsibility to anticipate and, if possible, preclude full-blown pathology instead of merely sitting back and waiting until it had assumed major proportions. This soon came to mean a preparedness to study and treat problems at their incipency, not so much for what they might lead to in the future but as issues of the present calling for the relief of emotional discomfort, regardless of its magnitude or possible prognostic implications. The psychiatric concept of childhood thus underwent a succession of changes within a short span. It was at first encompassed in the specialty as a retrospectively significant antecedent of adult maladjustment, *with an eye on the past*. It is then viewed, with a bit of Cassandra-like foreboding, as a potential precursor of adult malfunctioning, *with an eye on the future*. It was finally granted the right to exist on its own terms, neither as history nor as premonition, but as worthy of being seen in the perspective of immediacy, *with an eye on the present*. The time was ripe for the remedial consideration not only of glaring departures from normalcy but also of what Douglas A. Thom aptly referred to as "the everyday problems of the everyday child."

With this as a premise, Thom opened in 1921 the so-called Habit Clinic in Boston. In 1922, the National Committee for Mental Hygiene, fully 13 years after its foundation, was ready to institute the first child guid-

ance clinics, an organization which has since then become a nationally, and to quite an extent internationally, entrenched feature of communal policy.

These clinics soon became aware of an etiologic ingredient which had hitherto received but scant attention in the halls of formal learning. Those were the days when the markets resounded with the din of doctrinaire factions which, from separate booths, elevated the central nervous system, the endocrines, foci of infection, allegedly ubiquitous instincts and complexes, or supposedly innate typologic characteristics to the rank of all-valid explanations of human behavior. The child guidance clinics, in closer touch with homes and schools than any psychiatric unit which was then in operation, came to appreciate children as more than merely amebadlike creatures sending out their variously constituted pseudopodia into a more or less hazily structured environment. They recognized the dependence of early personality development on the impact of specific people in the environment. The investigations of parental attitudes and their effects may well be regarded as a great contribution made by these clinics not only to child study but also, in the general area of psychiatry, to a reorientation which began to include the varieties of interpersonal relationship in the range of etiologic and therapeutic considerations.

The organization of the clinics started out with a determined change from departmental isolation. The desire for multidisciplinary collaboration gave form to the "team" of psychiatrist, psychologist, and social worker, but this auspicious beginning, instead of serving as a lever for further broadening, was allowed to be frozen into a rigid mold. All disciplines other than those three were kept away from the clinic doors. As a result, before long the clinics were estranged from medicine, set admission age levels beyond the years of infancy, held the problems of retarded children to be outside the realm of their usefulness and, limited by these and other self-imposed restrictions, became another extremely valuable but nevertheless separate pile of building stones to go into the edifice of child psychiatry.

By the middle of the 1920's, there certainly was ample raw material lying around in different clusters and waiting for an architect to put it together. This task was carried out admirably by August Homburger of Heidelberg, who managed to house the thus far detached piles of building stones under one roof as closely interconnected parts of a unified structure. Homburger, on the faculty of a typically hyphenated neuro-psychiatric unit, was invited by his chief, Franz Nissl, to head an outpatient department. He brought with him a warm interest in children and quickly found himself in contact with pediatricians, educators, judges, and the personnel of child-caring institutions. He studied every aspect of childhood development and behavior and every available means of helping his patients. Shying away from the restriction to any one type of problem or method, he incorporated and integrated in his work and in his fascinatingly written book, published in 1926, the sum total of knowledge gathered from several sources. He, therefore, may be regarded as the first student, practitioner, and teacher of comprehensive child psychiatry devoid of sectional apportionment.

In this, Homburger stood alone for a while and, with a few exceptions, there was, at the time of his early death, still a prevalence of tubular vision in the nothing-but behavioristic, organicist, instinctivistic, or quasi-sociological approaches to children's behavior. All of them neglected an important group which, though exhorted to apply psychiatric understanding in dealing with children and chided for the lack of such understanding, was nevertheless denied passage through the portals leading to the acquisition of the proclaimed wisdom. Haughty pontification was apparently all that the pediatrician, the parents' first and foremost advisor, was thought to be good for. This is illustrated by the book, *The Child in America*, by W. I. and D. S. Thomas, a 1928 review of the studies and programs concerned with the behavior problems of children. The substantial volume dealt with the varieties of maladjustment, the treatment of delinquency, child guidance clinics, community organizations, parent education, and the contributions

made and planned by schools, psychologists, mental hygienists, and social workers, to the study, prevention, and treatment of early personality disorders. The authors, who spared no time nor space to cover the entire field, had no occasion anywhere to include the pediatricians as participants in any of these activities. In 1930, the Committee on Medical Care and Protection, in preparation for the White House Conference on Child Health and Protection, selected a special Subcommittee on Psychology and Psychiatry in Pediatrics. The beautifully worded conclusions expressed a plea for "psychiatrically intelligent doctors" but nothing was said about any practical arrangement which might teach doctors how to become psychiatrically intelligent.

In 1930, after a brief era of good-will oratory and get-together conferences, a psychiatric consultation service was set up at the Pediatric Department of the Johns Hopkins Hospital. The main objective of the task was presented as "an investigation of the rank and file of patients in the pediatric clinics for the formulation of psychiatric problems, the mastery of which should be made accessible to the pediatrician to serve him as the psychopathologic principles in dealing with children." Even though the avowed aim seemed to be one of carrying the torch of enlightenment to a group of more or less eager learners, the major advantage lay in the opportunity to test and demonstrate the usefulness of psychiatry in the main stream of a children's hospital. Selectivity on any basis was unrealistic and impractical in wards and dispensaries to which children came from every conceivable kind of milieu and with every conceivable kind of ailment. Under these circumstances, the liaison work had to comprise all aspects of a child's adjustment to living from birth through adolescence, associated with bodily diseases and anomalies, intellectual shortcomings, pathogenic parental attitudes, milder or more deep-seated emotional troubles, and a wide range of combinations. As similar undertakings began to be developed in the country sporadically, it became evident that here, in the hustle and bustle of busy medical centers, was a chance and an obligation to practice child psychiatry in the Hom-

burger sense, not as a compartmental preoccupation with intellectual deficit, scholastic problems, delinquent behavior, psychosomatic illness, psychologic and socio-economic deprivation, or neurotic and psychotic manifestations, but as a multifaceted discipline concerning itself with the overall responsibility for the amelioration of all and sundry difficulties presented by and to children referred for psychiatric assistance.

This does not imply in the remotest that such centers are, or should be, self-sufficient. They are by no means functioning as substitutes for the work done in the different rooms and cubicles of the edifice of child psychiatry. Their very existence would be unthinkable if it had not been for the separate efforts which furnished the foundation and the substance of the integrated structure. We still need, and should encourage, the expansion of child guidance clinics, which have proved themselves as indispensable pillars of community mental hygiene. Every effort should be made to provide adequate psychiatric counsel for our juvenile courts which still are, or at any rate should be, the principal adjusters of our delinquent youth. We should be sadly amiss if we did not acquaint ourselves fully with the truly breathtaking discoveries made recently in the area of mental deficiency. Child psychiatry continues to be enriched by advances made constantly in the fields of pediatrics, neurology, genetics, psychology, and sociology which keep adding to our knowledge of children in health and disease.

It is true that comprehensive child psychiatry, which has come into being less than half a century ago, is coming of age. It is true that this body of facts, theories, and practices, which did not even have a unifying name before 1933, has since then become accepted ungrudgingly as one of the scientific disciplines endeavoring to understand and help human beings. We are entitled to stand in awe before the vast amount of knowledge and insight that has been accumulated in so short a time. We child psychiatrists have formed our own clinics and have our own national associations and international congresses; very recently a subspecialty board has been

created, giving diploma recognition to qualified practitioners. Two leading universities have created full professorships of child psychiatry. The Royal Medico-Psychological Association has given formal status to child psychiatry by inviting one of its representatives to deliver the 1958 Maudsley lecture in London.

But, as in every science, last words have not been spoken and, considering the limitations of the species, the absolute and ultimate are beyond the horizon.* Having arrived, we are entitled to certain dissatisfactions with the extent of our achievements. Progress in every science depends on dissatisfaction, curiosity, and caution. It is those qualities that have provided the impetus for the introduction of ever new theoretical formulations, therapeutic avenues, research programs, and the improvement of residential facilities. It is those qualities that have prompted the work of the major contributors to child psychiatry.

Those qualities are still needed. There are still many gaps in our knowledge. This is no time for the smugness which pretends that we are already in possession of all the answers, that the sowing and planting have been accomplished, and that we are ready to sit back and enjoy the pleasures of eternal harvesting. Smugness can easily lead to stagnation. Some of us are too prone to surround the few kernels of truth with thick layers of as yet unproven hypotheses of one kind or another and, as teachers, to stifle the curiosities of our trainees by presenting these layers to them as established undisputable verities. If the teacher's speculations tend to be transmitted as articles of faith, theory and method are allowed to be frozen into rigid molds.

This pertains especially to certain treatment procedures. We are witnessing the spectacle of instruction which teaches a "technique" to be applied to all comers, regardless of the nature of the problems and the needs of each child as a unique experiment of nature. What happens to the treated patient is deemed by some less important than the niceties of the compulsive application of a learned technique. The therapist's minutely detailed "approach" to the diagnostically undifferentiated patient is considered as being of greater weight than the

specificity of the issue about which the patient and his family approach the therapist for help. The therapeutic cart is put much too often before the diagnostic horse. We would not think much of the surgeon who "approaches" an appendectomy, a thyroidectomy, and the setting of a broken leg with the same technique and the same instruments.

Fortunately for the future of child psychiatry, there are enough practitioners and teachers who are patient-oriented rather than technique-oriented, who pluralistically deal with the realities as they present themselves rather than with free-floating generalizations, and who whet their own curiosities and those of their students in the face of the multitudinous variety of issues that come before them. There is room for hypothesis, to be sure, but there is also an obligation to test every hypothesis for its scientific validity and its therapeutic effect. Treatment, under the circumstances, takes the form of an individualized, goal-determined program adapted to each child in accordance with his personal, carefully diagnosed, problem. This is different from the kind of stereotyped therapy which starts out as a journey into the unknown, with the vague hope that somehow, someday normalcy will be attained in the image of the therapist's concept of suburbanite propriety.

It is, of course, much easier to give a historical sketch of the development of child psychiatry than it is to outline its prospect for the future. But there are straws in the wind to indicate directions. There is a definite tendency to reduce compartmentalization and to hold the original piles of building stones together in units closely associated with medical centers. There is a growing realization of the need for increasing the number of residential treatment facilities for psychotic and near-psychotic children. Parents, impatient with the former laissez-faire attitude on the part of the medical profession have gotten together and, as the National Association for Retarded Children and the National Organization for Mentally Ill Children, have become a powerful influence, encouraging further investigations and

nudging legislatures into greater awareness of the situation. The National Institute of Mental Health is fostering both research and training.

In more circumscribed areas, much work has been done, and continues to be done, in the study of family relationship and its prophylactic and therapeutic utilization, the phenomenology and epidemiology of children's behavior problems, the diagnostic delineation of the more severe emotional disturbances, the biochemical aspects of certain forms of mental deficiency, the complexities of psychosomatic disorders, and

efforts, as yet timid and resisted by the insecure members of the group, to test the effectiveness of current therapeutic methods by means of follow-up studies.

The future of child psychiatry is bright. Its importance is now recognized universally. It has much to show for the short period of its existence. It will be brighter still if it manages to slough off a certain degree of smugness in its ranks, if it does not let its curiosity flag, if it keeps in mind that theory and technique are, for the physician, not ends in themselves but means to ameliorate the difficulties of patients.

SOME PROBLEMS OF DOSE VARIATION IN THE USE OF TRANQUILIZING DRUGS¹

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Because the implications of this title are broad and space does not permit an exhaustive account of all possible ramifications, this discussion is limited to the following:

1. A brief review of the development of dosage levels of tranquilizing drugs, with special emphasis on the prototypes of each group, namely chlorpromazine, reserpine and meprobamate.

2. A consideration of current dosages in use both in this country and abroad.

3. A brief summary of 3 cases illustrating some problems of dosage occurring in a clinical setting.

4. Some suggestions for developing a more scientific basis of dose range determination.

HISTORICAL ASPECTS OF DOSE RANGE DEVELOPMENT

Early workers with these drugs, unlike recent investigators, did not emphasize the effects of dosage range variation. Wilker (1) has published an excellent review of psychopharmacology in which the historical development of these drugs is discussed. The first medical application of a tranquilizing agent was for a non-psychiatric purpose. In 1951 the French investigator Laborit (2, 3) used chlorpromazine to prepare patients for major surgery. He attempted to induce a state of artificial hibernation with the drug that would decrease the total body metabolism, permitting patients to be refrigerated. Laborit, using doses of 50 to 100 mgm. I.V., noted no alterations in consciousness with the drug but rather a state of placid indifference

which he termed "a lobotomie pharmacologique." Determination of dosage appears to have been made on an empirical basis. Shortly after Laborit's reports, chlorpromazine was "discovered" by psychiatry, although there is no specific information on how the transition was made. Hamon (4) used chlorpromazine in 1952 in combination with meperidine in a patient with "mania." The dosages of chlorpromazine used were 50 and 75 mgm. I.M. Shortly thereafter, Delay and co-workers (5) also began to use chlorpromazine for mental disorders. The 6 patients of their initial series suffered from manic psychoses of various types. They emphasized the clinical effects of the drug rather than the dosage range. In two of the cases no dose is described. For two others, 50 mgm. q.i.d., I.M. and 75 mgm. t.i.d., I.M. is mentioned. In another, 25 mgm. I.M. in a single dose, and in the remaining, 100 mgm. orally. Later in a series of 38 patients, good responses were reported with chlorpromazine but again these investigators were not specific about the doses of medication that were used (6).

In 1953, Stahelin and Keilholz (7), in reporting on the treatment of a mixed group of psychiatric patients, described for the first time a detailed dosage schedule. They administered 25 mgm. of chlorpromazine I.M., 3 to 6 times daily. After 5 to 10 days they switched over to oral medication, in doses not exceeding 200 mgm. daily. They reported their results as generally favorable although no statistical data were given. Later, a number of other European investigators reported good results with chlorpromazine in the treatment of disturbed patients at levels averaging 100 mgm. daily which today is considered to be in the low dosage range.

About this time, several investigators in the United States and Great Britain began using chlorpromazine (8, 9, 10, 11). Again, as with European investigators, there was almost complete agreement on the clinical response and effects of the drug but con-

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siderable variation in the reported dosage range. Table 1 indicates the dosage range

TABLE 1
CHLORPROMAZINE DOSAGE RANGE IN
SOME EARLY INVESTIGATIONS

Investigator	Dose Range/Day (mgm.)	Route
Elkes and Elkes	75-300	p.o.
Goldman	150-1800	p.o.
Hall and Dunlop	50-450	p.o.
Hoch and Malitz	300-400	p.o.
Kinross-Wright	200	I.M.
	200-4000	p.o.
Kurland	350-400	I.M. and p.o.
Winkleman	30-400	p.o.
Lehmann and Hanrahan	100	I.M.
	100-800	p.o.
Gibbs and Wilkens	75-450	p.o.

used by some early investigators of chlorpromazine. A few of these investigators tried systematically to isolate and measure the effects of chlorpromazine at various dosage levels by utilizing objective psychological tests(11a, 12, 13).

Chaptal in 1954(14) was the first to report using chlorpromazine on a mgm. per kg. body weight basis. It is of interest that he used the drug in doses of 2 to 3 mgm. per kg. for the treatment of "rheumatic and encephalitic chorea." Basmajian (15) in 1955 also used it in neurological disorders to decrease spasticity in single doses of 50 mgm. I.V. with favorable results.

The use of the whole root of *Rauwolfia Serpentina* is recorded centuries ago in the medical annals of India. However, isolation of some of the active crystalline alkaloids was not successfully begun until 1931 (16) and it was not until 1952(17), that reserpine, the most active of these alkaloids was identified. The pharmacological effects of reserpine in animals were studied in 1953 (18) and the sedative and hypotensive effects reported by a group of internists in Boston shortly thereafter. They administered the drug for the treatment of hypertension(19, 20). The first reports of reserpine as a tranquilizing agent in this country were not published until two years later (21).

Although many investigators have studied

reserpine, including several who used psychological techniques and physiological measurements, wide variations have existed in dosage range, routes of administration, duration of treatment, selection of patients and criteria for improvement, making valid correlative conclusions concerning their data difficult(21, 22, 23, 24, 25, 26, 27). Dosages in these studies have ranged widely from 1 to 130 mgm. per day.

Meprobamate belongs to a group of glycerol ethers which are motor depressants. Its precursor was mephanesin, discovered in 1946 and the first of this group used in the treatment of anxiety and tension states(28, 29, 30). Various analogues of this drug were synthesized, the most notable of which is meprobamate(31). Meprobamate was reported to have considerable clinical value in the treatment of anxiety states with dosages ranging between 400 to 1600 mgm. daily(32, 33). Alcoholics were treated with as much as 800 mgm. every 3 to 4 hours(33). It had also been reported successful in the treatment of chronic psychotic patients given 1000 to 5000 mgm. per day (34). One investigator reported using up to 9600 mgm. daily for periods of 12 to 18 months(35).

CURRENT DOSE RANGES

In recent years there has been a general tendency for physicians to administer higher average dosage levels of chlorpromazine and to a lesser degree reserpine. than were used when they were studied initially. Criteria for these changes, however, are vague. One group of investigators felt that the optimal dosage level should be higher in the more severely ill patients, and determined dosage as a direct function of the severity of the illness(36). Some emphasized the diagnostic category rather than the severity of the illness(35). Still others utilized the development and intensity of side effects such as parkinsonian symptoms in determining dosage level(37, 40). Thus it may be noted that a great deal of the subjective has entered into the use of these drugs. Considerably more research is necessary to clarify such issues.

In this country, dosage levels of chlorpromazine have risen from an average of 150 mgm. daily to a level of 300 to 500

mgm. daily (38, 39). Kinross-Wright (40) has continued to suggest higher average levels than most other investigators especially in the treatment of chronic cases. Ayd (41) on the other hand, feels that these large doses are no more effective than doses of 200 to 300 mgm. daily except in an occasional patient. Table 2 shows the cur-

TABLE 2

CURRENT AVERAGE DOSAGE RANGE OF
CHLORPROMAZINE IN VARIOUS COUNTRIES

<i>Country</i>	<i>Dose Range/Day (mgm.)</i>
England	150-300
France	400-600
Denmark	200-800
Switzerland (French)	200-400
Switzerland (German)	150-300
United States	300-500

rent average dosage range of chlorpromazine in various countries. It is possible that the lower dosages used in some countries reflect the innate conservatism of the citizens of that country!

Current therapeutic dosage levels of reserpine generally range from 0.1 to 5.0 mgm. daily orally (42). Occasionally average doses as high as 5 to 15 mgm. daily are recommended (43).

Present day therapeutic levels of meprobamate have varied very little from the more conservative early reports. The average dosage remains at 400 mgm. given 3 to 4 times a day.

ILLUSTRATIVE CASES

The following cases from the clinical service at Psychiatric Institute illustrate the types of therapeutic problems which have arisen in the past in relation to dosage levels:

Case 1.—A 31-year-old, white, male, clerical worker was first seen in the out-patient clinic in 1953. He was noted to be introspective, markedly voluble, loquacious and circumstantial. He complained of restlessness, headaches and somatic symptoms. He was followed at weekly intervals receiving psychoanalytically oriented psychotherapy. Psychological tests suggested a schizophrenic illness of long standing without intellectual damage. The patient

showed slight improvement during the early course of psychotherapy. After 3 years of treatment, however, he became increasingly agitated, developed a structured delusional system, auditory hallucinations and marked tension with anxiety. There was gross evidence of a thinking disorder. The patient was admitted to the Psychiatric Institute and given 50 insulin coma treatments resulting in a slight reduction in anxiety but no change in his basic symptomatology. He was then started on 300 mgm. of chlorpromazine a day. Within a period of 2 months, the patient became more coherent and there was a reduction in the tangential and circumstantial aspects of his thinking. His therapist felt encouraged and the dose was gradually increased to 1600 mgm. daily over a 6 month period. The improvement described disappeared on this higher dosage regime. The patient became increasingly tense, anxious and withdrawn. The dose was reduced to 800 mgm. without any change in his clinical condition. He was presented at conference to determine the feasibility of other forms of treatment. The patient was noted to show a moderately severe parkinsonian-like picture. Medication was discontinued so that a better idea of the baseline state of the patient, free from side effects could be gained. Over the next 2 months the parkinsonian features disappeared and he showed greater improvement than ever before. The anxiety and tension he experienced on high doses of chlorpromazine were markedly reduced. His original delusions and hallucinations did not recur. No evidence of disorganized thinking could be detected. The patient returned to work and was discharged to his own custody without further medication.

In this case the primary and secondary symptoms of schizophrenia, namely the thought disorder, hallucinations and delusions were reduced on low levels of the drug. Raising the dosage to accelerate the recovery intensified certain side effects of the drug which were then confused with symptoms of the primary disease process. The increased tension, restlessness and anxiety was thought to be a worsening of the patient's illness. Actually these symptoms were due to the drug itself and when the drug was discontinued they subsided.

Case 2.—The second patient was a 53-year-old, white, married, salesman with a history of multiple phobias and pan-anxiety for 7 years. The illness seemed to begin with an attack of vertigo and fears of being alone. Dur-

ing the 6 years preceding hospitalization the patient developed increasing phobias of closed spaces, heights, subway travel and losing his mind. During this period he was in psychotherapy on a twice a week basis and at various times received chlorpromazine, 150 mgm. daily, as well as reserpine and meprobamate in "low doses." He showed moderate improvement for a short time on the chlorpromazine but later relapsed. There was no response to the reserpine or meprobamate. Because of increasing pan-anxiety, panic attacks, agitation, referential ideas, multiple phobias, moderate depression and anhedonia, he was admitted to Psychiatric Institute with the diagnosis of schizophrenia, pseudoneurotic type. An attempt was made to control his symptoms with chlorpromazine. His dosage was raised to 1500 mgm. daily for a period of 3 months. Side effects were absent at this dosage level except for a slight parkinsonian picture. In spite of medication the patient continued to show an intensification of his original symptoms. Several other tranquilizers and somatic therapies were tried without success. A bilateral precoronal lobotomy was performed 6 months after his admission. Transient improvement in all symptoms was observed for two months. Then the patient relapsed. He received chlorpromazine once more in a dose ranging from 400 to 1200 mgm. daily for 2 weeks without benefit. No side effects were observed.

This case illustrates the surprising lack of side effects in some patients at high dosage levels on tranquilizing agents. It also, unfortunately, demonstrates that some cases, in which tranquilizers appear indicated, still do not respond. This man's anxiety and tension were so severe they did not even respond to psychosurgery.

Case 3.—A 55-year-old, white, male, married policeman was admitted to the hospital with a 5 year history of agitation, fearfulness, obsessive preoccupations, paranoid ideation, grandiosity and loquaciousness. A course of 9 electroshock treatments prior to admission had resulted in improvement lasting only 6 months. On admission, the patient's dosage of chlorpromazine was rapidly raised to a maintenance level of 600 mgm. daily. His talkativeness, grandiosity, delusional ideas and euphoria diminished considerably and he became manageable within a week. Troublesome side effects developed, however, including marked drowsiness, nasal congestion, constipation and moderate depression. The latter did not respond to the addition of amphetamine. After

4 weeks the symptoms gradually returned. He was started on reserpine in a range of 4 to 8 mgm. daily with little therapeutic effect over a 3 month period. A second course of chlorpromazine was given ranging from 600 to 1400 mgm. daily. At the maximum dose his symptoms again diminished but he developed severe side effects once more. After 2 months he relapsed. An intensive course of ECT failed to alter the pattern. Because of his assaultive behavior and rapidly worsening condition a bilateral precoronal lobotomy was done. A biopsy⁷ showed early Alzheimer's Disease. Following surgery, there was a quantitative diminution in all symptoms, but sporadic episodes of agitation and assaultiveness continued to occur. Chlorpromazine was given again over a range of 150 to 1400 mgm. a day in an attempt to control these outbursts. There was no effect at the lower levels but above 800 mgm. the patient became much less agitated and was finally stabilized at 1400 mgm. a day. He appeared more relaxed and less grandiose but his affect remained inappropriate and his associations impaired. A moderately severe parkinsonian syndrome developing at this level in no way affected his sustained improvement. Eventually this side effect cleared with the addition of Artane.

In this case, increasing the dose to therapeutic levels was associated with severe side effects accompanied by significant clinical improvement. The addition of an adjuvant drug helped to control the side effects so that it was not necessary to discontinue the phenothiazine.

These cases illustrate the recent trend towards prescribing tranquilizing drugs empirically. We feel that while the empirical approach is necessary in the opening of a new field of scientific endeavor, efforts should be continuously in the direction of reducing subjective factors. The question now arises as to how we can best proceed in our present and future evaluations of these psychopharmacologic agents.

RECENT APPROACHES TO DOSE RANGE PROBLEMS

Early studies of tranquilizing drugs were limited to the usual pharmacological battery of animal tests for toxicity and acute and chronic effects at graded dosage levels. In more recent years, laboratory methods used in the search for new psychopharma-

cologic drugs have undergone much refinement. Toman and Everett(44) list 6 standard and 14 alternate procedures that might be used. They point out that a battery of these tests in several species offers some insurance against missing a potentially valuable agent. These techniques are listed in Table 3.

TABLE 3

SCREENING METHODS FOR STUDY
OF TRANQUILIZERS

(Toman and Everett)

Standard Procedures

1. General screening in white mice, oral and intraperitoneal.
2. Potentiation of barbiturates.
3. Electroshock latency.
4. Body temperature control.
5. Spontaneous behavior in other species, single and multiple doses.
6. Chronic oral administration in dogs and rats.

Other Tests

1. Threshold and form of EEG in unanesthetized rabbits and monkeys.
2. Quantitative recording of limb tremor.
3. Body temperature of mice to warm and cold environments.
4. Recording electrically and mechanically evoked limb reflexes in rabbits.
5. Conditioned avoidance responses in rats.
6. In vitro tests on isolated uterus.
7. Blood pressure and respiration in anesthetized cat preparations.
8. Blood pressure response in experimental hypertensive rats.
9. Behavior after injection into ventricles of cats with chronic cannulas.
10. Quantitative recording of mouse motility in activity cages.
11. Biochemical tests of drug ability to release or reduce serotonin.
12. Stimulation of and recording from subcortical structures.
13. Assays in submammalian species or tissue cultures.
14. Tests for protection against drug induced emesis.

The question remains, however, whether such tests give a valid indication of therapeutic effectiveness of dosage level in man. The rat, cat, rabbit, dog and even the monkey represent such a wide species difference from man and his unique mental apparatus that it is difficult to correlate animal findings with the determination of human treatment dosages. It appears to us that the ultimate determination of correct therapeutic dose range must come from clinical, psychological and neurophysiological studies in man. Probably the single most important factor is clinical observation. Clinical observation may be correlated with batteries of objective psychological tests, double blind techniques, blocking studies of drug induced hallucinations, observations of electroencephalographic changes and other physiological measurements, but it cannot be subordinated to them. Specialized techniques are best performed on inpatients at a specialized research facility utilizing trained personnel. However, good clinical observations can be carried out in the usual clinical psychiatric inpatient or outpatient treatment setting.

The small clinical pilot study of 6 to 12 patients by experienced clinicians often contributes much to the evaluation of a new drug, especially in regard to factors of dosage and side effects. The value of such studies should not be minimized. We have had extensive experience with both blind and non-blind studies and have observed that the small pilot study has yielded accurate information not only concerning dosage levels but also relative to the spectrum of complications which were later confirmed by controlled studies of larger samples.

Such pilot studies as undertaken in our clinical laboratory are a joint undertaking of medical, nursing and social service staff under the personal supervision of the project physician. Diagnoses are established by a panel of psychiatrists and supported by psychological tests when necessary. The initial dosage schedule is established on the basis of the manufacturer's recommendations. A wide degree of flexibility must be permitted, however, to deal with any adverse side effects that might suddenly occur. It is sometimes necessary to lower or raise dosage levels markedly from the starting

dosage because of the individual variations in tolerance that are commonly encountered.

Before starting the active substance, a period of 7 to 14 days is devoted to observing the patient on placebo medication. Frequent and regular ward rounds are made, in which therapist, ward supervisor, nursing staff and social worker meet with those in charge of the project to discuss each patient's progress. The patients are followed personally by the drug project supervisor. An internist is part of the team to aid in evaluating and treating side effects developing as a complication of usage of new drugs. A battery of laboratory tests including hematological, hepatic and urinary procedures are performed before starting the drug, and repeated weekly. These include CBC, urinalysis, BSP, alkaline phosphatase, cephalin flocculation, BUN and fasting blood sugar. Ancillary studies including serial electroencephalograms and electrocardiograms are done whenever they seem indicated.

Cole, *et al.* (45) have elaborated on certain procedures that may be followed to improve clinical drug evaluation reports. They suggest that the dosage schedule and the variations be specified, and any technical problems of administration or facts regarding the duration of action be stated. Also they feel it is preferable that units of dosage be reported in the metric system, that route of administration, concentration and volume be recorded, and that effective dosage be expressed on a kg. per body weight basis whenever possible. Concentrations of the drug in blood and urine should be obtained when present techniques are sufficiently developed. We are in complete agreement with these aims. At the present time one of our co-workers has shared in developing a technique for the determination of phenothiazines in tissue and is engaged in working out a quantitative method for determining phenothiazine levels in the blood (46).

By following these procedures, the small pilot study becomes a carefully planned scientific instrument yielding data about drug action in the individual often missed in large scale clinical studies designed on a more casual observational program.

SUMMARY

Early published studies of the use of tranquilizers revealed wide variations in the methods of studying the clinical effectiveness of these drugs. Some studies omitted dosages used in arriving at conclusions regarding drug action. Others included dosage schedules but did not establish clearly the criteria on which these dosages were based. Generally the overall approach in these investigations was empirical. Currently, suggested dosage ranges of chlorpromazine, reserpine and meprobamate show a greater consistency than in the past.

Three cases are presented to demonstrate some of the clinical problems encountered in the administration of these drugs. They emphasize the necessity of focusing on dose range-clinical response relationships in future investigations.

The design of a small pilot study is presented. It is considered that this type of study offers the best opportunity to gain valuable information about dosage and drug effect when carefully and systematically performed.

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BACKGROUND FACTORS AND SYMPTOM PRESENTATION IN A CHILD GUIDANCE CLINIC

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In a recent study, Roach, Gurrslin and Hunt(1) investigated the social-psychological characteristics of families availing themselves of the services of a community supported child guidance clinic in the Buffalo area. It is not too often that a clinic stops to scrutinize the statistical material at hand from this viewpoint, which made the findings of this study particularly interesting. These authors underlined the fact that particular agencies and specific geographic areas have their own peculiar features and that they may be essentially unrepresentative samples of the population to which data obtained from them becomes generalized. As a consequence they envisioned their study as one in a projected series of independent investigations of separate agencies in different locales, providing data which could eventually be pooled and afford a basis for an overall systematic analysis of social-psychological variables in the utilization of mental health facilities.

The present research has a twofold purpose. First it is intended as a replication of the Buffalo study in a different setting, in line with accruing data from a number of potentially disparate sources as suggested by Roach, Gurrslin and Hunt. Secondly, it is an attempt to move beyond largely descriptive statistics and to ascertain whether associations exist between demographic characteristics and the specific nature of the presenting complaints or symptoms.

PROCEDURE

The sample cases comprised all families applying for psychiatric assistance to, the Children's Clinic of the Institute of Living, Hartford, Connecticut during 1957 and 1958. The clinic is a non-profit service offered to the residents of the Greater Hartford area. A very nominal fee is charged but no one is deprived of services because of an inability to pay. All information was ob-

tained from the parents in an intake interview with a social worker. In that occasional omissions and ambiguities occurred in the data, the total number of cases employed in the computations varied with the specific descriptive classification being investigated.

Six of the 7 characteristics evaluated by Roach, Gurrslin and Hunt were utilized in this study: (a) sex of child, (b) family size, (c) occupation of major wage earner, (d) race, (e) religion and (f) symptom. The seventh, desirability of residential area for each family, was omitted because information relevant to rating this characteristic was not fully available.

Data for making the appropriate comparisons between the clinic cases and Greater Hartford area population derived from United States census figures(2, 3).

RESULTS

Treatment of the data paralleled the methodology of Roach, Gurrslin and Hunt with chi square used to test for statistical significance. An examination of Table 1, reveals that there was a gross underrepresentation of girls in the clinic population ($\chi^2 = 33.70$, d.f. = 1, $P < .001$), in agreement with the findings of the Buffalo study. Contrary to the results of this prior investigation, however, the present study revealed no statistically significant difference between the clinic and the general population with regard to race. While the Buffalo clinic serviced a disproportionately small number of non-whites, the Hartford clinic had non-white applicants in numbers approximating their representation in the population as a whole.

Table 2 indicates that the clinic families, classified according to occupation of major wage earners, fell into a distribution which on an overall basis was not significantly at variance with the general population, though the individual category "semi-skilled worker" was notably overrepresented. By contrast the Buffalo facility had an underrepresentation of the semi-skilled group and

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TABLE 1
DISTRIBUTION OF SEX AND RACE IN PERCENTAGES OF CLINIC
AND HARTFORD AREA POPULATIONS
(N = 239)

Population	Sex			Race		
	Male	Female	Total	Whites	Non-whites	Total
Clinic	74	26	100	93	7	100
Hartford Area	48	52	100	96	4	100

TABLE 2
DISTRIBUTION OF OCCUPATIONS IN PERCENT-
AGES OF MAJOR WAGE EARNER IN CLINIC
FAMILIES AND HARTFORD AREA POPULATION
(N = 230)

Occupation	Clinic	Hartford Area
Profession and technical	10	10
Proprietors, managers, officials	13	14
White collar, clerical	18	19
Skilled workers	19	22
Semi-skilled workers	32	21
Unskilled workers	8	14
Total	100	100

a conspicuous overrepresentation of the professional and managerial classes with the total occupational pattern varying from the census population to a statistically significant degree.

From Table 3 it can be seen that the religious composition of the clinic population differs somewhat from the general population. This disparity approaches statistical significance ($\chi^2 = 5.72$, d.f. = 2, $P < .10$) with a disproportionately small number of Catholics and an over-large number of Protestants and Jews represented in the clinic group. This particular finding is in the same direction as the data obtained by Roach, Gurrslin and Hunt, but not as clear-cut in nature.

TABLE 3
DISTRIBUTION OF RELIGIOUS AFFILIATIONS IN
PERCENTAGES OF CLINIC AND HARTFORD
AREA POPULATION
(N = 229)

Religion	Clinic	Hartford Area
Catholic	47	58
Jewish	13	9
Protestant	40	33
Total	100	100

Data relevant to number of children in the clinic families is included in Table 4. As was the case in the Buffalo study, there is a gross underrepresentation of only children in the clinic sample and a strikingly high number of children with 2 or more sibs ($\chi^2 = 50.18$, d.f. = 2, $P < .001$).

TABLE 4
DISTRIBUTION OF NUMBER OF CHILDREN IN
FAMILY IN PERCENTAGES OF CLINIC AND HART-
FORD AREA POPULATION
(N = 238)

Number of Children	Clinic	Hartford Area
1	16	44
2	32	35
3 or more	52	21
Total	100	100

As a final step in this phase of the study the Hartford and Buffalo Clinics were compared for the prevalence of various types of presenting symptoms. A statistically significant difference in the distributions was obtained ($\chi^2 = 15.88$, d.f. = 5, $P < .01$). Table 5 reveals that in the Hartford clinic the initial complaint was more often aggressive behavior, though in both clinic groups this was the predominant symptom classification. There was also a larger number of mixed symptom patterns in the Hartford clinic population, while the Buffalo group contained a greater proportion of cases falling into the mental retardation category.

As mentioned previously a second purpose of this study was to ascertain whether significant relationships occurred between the presenting symptoms and the specific demographic variables studied. The data were analyzed in the form of a series of contingency tables—symptoms distributed within each of the descriptive categories taken individually.

TABLE 5

DISTRIBUTION OF PRESENTING SYMPTOMS IN
PERCENTAGES OF HARTFORD AND BUFFALO
CLINIC POPULATIONS

Symptom	Hartford	Buffalo
Aggressive	40	35
Nonaggressive	24	28
Somatic complaints	8	9
Mentally retarded	8	14
Mixed	19	10
Unknown	1	1
Total	100	100

Considering the symptom breakdown by sex, it was found that girls in the Hartford clinic sample had somatic complaints to a significantly greater degree than boys, though it is to be noted that this particular type of symptom occurred in a relatively small number of the total cases. Only 4% of the boys presented this symptom compared with 19% of the girls with this complaint. There were no other symptoms which were substantially more characteristic of one sex than the other.

When the presenting symptoms are distributed by race, the non-whites have a significantly higher incidence of difficulties in the aggressive category. The figures were 70% and 37% aggressive symptoms for the non-whites and white groups respectively. There were no meaningful relationships in other symptom categories.

With respect to the symptoms by occupation distribution, non-aggressive presenting complaints characterized the upper three occupational grouping while symptomatic aggressive behavior was associated with the three lower occupational classifications. For the aggressive symptom category the average of the upper three occupations was 27% occurrence in contrast to 47% for the lower three classifications. It is worth pointing out that there is a gradual rise in the incidence of reported aggressive symptoms as one proceeds down the list of occupational titles, with the extremes being 9% for the professional technical group and 55% for the unskilled workers. The incidences for non-aggressive presenting symptomatology run in a reverse direction, but not quite as consistently, with the upper three occupational classes averaging 34% and the lower groups 18%. The other types of symp-

toms did not show any particular kind of ordering with occupation.

An appraisal of symptoms by religious affiliation and then by number of children in the family demonstrated no significant associations. This suggests that the kinds of symptoms reported in the present population are grossly independent of these factors.

DISCUSSION

The disparities between the findings of the present study and those of the previous investigation lend convincing support to the notion advanced by Roach, Gurrslin and Hunt that meaningful evaluation of social-psychological factors in the utilization of mental health facilities must subsume a number of separate samples from different agencies in varied locations. The dangers inherent in extending the findings of a single agency are immediately apparent in the comparison of the Hartford and Buffalo clinics.

Roach, Gurrslin and Hunt concluded that the population serviced by the Buffalo clinic could be characterized as "middle class." One immediate conclusion from the present findings as compared with the Buffalo clinic might be that the Hartford facility served a wider segment of the population, in the sense that no one class of patient seemed to predominate. The underrepresentation of Catholics and overrepresentation of Jews and Protestants deviated less from the population figures than had been the case in the other clinic. Non-whites were present in the Hartford clinic case load in proportion to the general population and the only occupational classification out of line with expectation was the semi-skilled group. The disproportionately large number of males served is a finding which is probably true of almost all the clinics throughout the country and may reflect a relationship between the tendency for parents to be most concerned about aggressive symptomatology and the inherently more aggressive role that is typically fostered in the male. The reason for the significantly small number of only children brought to the Clinic is not immediately apparent. It could conceivably result from the generally greater financial resources available for treatment in families

with one child, and their consequent preference for private therapy.

In endeavoring to interpret the associations between demographic variables and symptoms, the occupational background findings suggest that the professional and white collar group with their better education and greater psychological sophistication are apt to be more alert to the occurrence and seriousness of withdrawal symptomatology which might pass unnoticed or be considered unimportant by the lower middle class or working group. It might also reflect that the type of home environment and value system of families at the upper economic levels could contribute to a partial inhibition of destructive, acting out behavior in the children and a commensurately greater prevalence of seclusive symptomatology. The significant association between race and aggressive symptoms could be taken to mean that the non-white population as a result of long exposure to discrimination and prejudice is sensitized to having their children show any aggressive behavior. That is, that which might be taken as normal aggressive behavior in a white child is considered deviant in a non-white child since it will likely cause him difficulty in adjusting to his low status in our society. It could be hypothesized, therefore, that non-white families would be prompted to bring children with an aggressive symptom picture to the clinic comparatively more readily than white families.

SUMMARY

The study undertook to evaluate the kinds of family utilizing the services of the

Children's Clinic of the Institute of Living. In line with the previous investigation of Roach, Gurrslin and Hunt, 5 demographic factors were examined in 239 clinic patients. These were (a) sex of child, (b) family size, (c) occupation of major wage earner, (d) race and (e) religion. In addition, an effort was made to categorize presenting symptoms. The distribution of each of these descriptive characteristics in the clinic population was compared with census figures for the general population of the Greater Hartford area. The pattern of presenting symptoms found in the Hartford Clinic was contrasted with the results of the previous study. An effort was also made to determine whether these factors and the various kinds of presenting complaints were related in any way. It was found that the Hartford Clinic group did not always conform to general population expectation, particularly with respect to composition by sex, and number of children in the family and also differed from the Buffalo clinic. Statistically significant associations were obtained between occupational level and race and the symptom categories subsuming acting out and social withdrawal types of behavior.

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A CHILDREN'S UNIT IN A STATE HOSPITAL

N. E. STRATAS, M.D.,¹ AND K. T. SCHMIDT, M.D.²

Beginning with work with mental defectives and, in courts, with "juvenile delinquents," the history of child psychiatry has moved through child guidance clinics and more recently to specialized children's residential units. However, a large portion of children's work remains in the sphere of the state mental hospital, especially in states where there are no other large inpatient treatment centers. This article describes a unit set up in a state mental hospital, for patients under the age of 18.

Originally at Eastern State Hospital, children were placed on adult wards with no effort to group them; however, about 4 years ago it was decided to group all boys and all girls under 18 in 2 separate wards. At first these wards were in separate buildings and were taken care of by a doctor who was also assigned other wards. There was very little extra activity planned for the children but enough improvement was noted to bring the two groups together in one building and to create several activities. Recently a more intensive program with a substantial staff has been directed at the unit with gratifying results.

Although objections have been raised in the past to locating a children's unit at a state hospital because of the supposed stigma involved, we find that this problem has greatly diminished as the staff, the parents, the children, schools and social agencies, establish a better relationship.

Admission to the unit is by the usual procedures of admission to a state hospital. However, seldom is a child committed as mentally ill, but rather, as a 45-day-care admission which is changed to voluntary status if further hospitalization is necessary. As well, the courts send many children for evaluation and therapy if necessary.

Our policies are based on fairly simple philosophical and psychological tenets; there is a general attitude of acceptance, warmth and understanding. We feel that in

view of the child's experiential world to date, he is entitled to be as he is, unhappy, and disturbed. At the same time we feel that certain limits are necessary as a basic frame of reference and a baseline of values. The child may not infringe upon the other children, the staff or upon the physical property.

Our object is to enable the children to return home; to help them to improve sufficiently to be placed in as near normal a situation as possible, and there to be followed on an outpatient basis by local clinics, or privately by psychiatrists or psychiatrically-oriented general practitioners.

The unit is under the direction of a physician-in-charge with previous psychiatric experience. He does the overall planning for the unit, sets policies and outlines the schedules. He is almost always available to staff members and has weekly meetings, with everyone involved in the unit and as well, with each department. In this way we attempt to derive a good interdepartmental relationship, alleviate anxiety of staff members accruing from their jobs and discuss any contrary opinions and procedures. The physician-in-charge admits the children, examines them physically and psychiatrically, orders necessary tests, assigns the children to groups and activities, and orders and supervises or conducts various forms of therapy. He in turn is closely supervised by our consulting child psychiatrist.

The 2 wards (capacity of 27 each) are L-shaped with the bedrooms along the long part of the L, and a smoking room and an alcove with 6 beds in the short part. Where these two parts meet there is a day-room, with lounging chairs, television, radio and record player. Centrally, the two wards merge into an area that contains the doctor's office, the nursing office, the treatment and examining room, the psychologist's office and the school rooms. In the basement are the recreation room and the occupational therapy shop.

Behind the building is an enclosed court

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yard with facilities for outside games. In front is a large lawn area for basketball and baseball. To the right of the building is a woods with a small stream which is easily accessible.

The intellectual range of the children is usually average, with a substantial number at both extremes of the scale; their diagnoses vary from the mildest adjustment or behavior problems to very severe psychotic problems. The patients we receive are primarily mentally ill but multiple problems are involved; deficiency, organicity, personality disturbance, *etc.*

The children are divided into 4 groups, according to age and achievement levels, and participate in the program as groups, while at the same time attention is given to individuals in each group, for which a basic program is scheduled. The programs are fairly structuralized but pliable enough to allow for group and individual variation as needed. The program is set up so that therapy, school, and activities are incorporated. There are regular group therapy sessions for each group as well as individual therapy, play therapy, supportive therapy, superficial and deeper psychotherapy and hypnotherapy. The psychology department is actively involved in the therapy program under the direction of and assisting the physician.

One of the psychologists works full time in the unit administering tests as well as assisting in therapy. Each child that comes into the unit receives a thorough psychological evaluation, which assists in making diagnoses and in directing therapy.

The nursing personnel are very important members of the unit, both physically and therapeutically. The attendants are both male and female and very commonly find themselves in the roles of parental figures.

There are 3 full-time and 3 part-time professional teachers. The groups are small enough, 6 to 9 in each, to permit individualized attention and teaching. The school is designed to help develop creative patterns of behavior, to stimulate interest in learning and where indicated to maintain scholastic achievement sufficient to allow the child to return to his own grade when he is released.

The school also conducts educational

trips, a school newspaper written and edited by the students, weekly dances, and regular bus and station wagon rides.

The occupational therapy projects are aimed at motivating an interest toward activity, or offering the aggressive children a release in a socially acceptable fashion. The O. T. department could be of even greater value by including pre-vocational training, particularly for children who will not continue schooling after leaving the hospital. This department also sponsors roller-skating, swimming and bowling in the community facilities and softball, movies, *etc.*, on the hospital grounds. There is also an active music therapy division.

Insofar as management is concerned, we find that the permissiveness within limitations of a group structure, common to everyday living is very satisfactory. Problems are usually handled by restriction of activities or deprivation of privileges. Acute situations, as when a child becomes recalcitrant or harmful to others, have to be handled immediately and at times in a forceful manner. Then it may become necessary to remove a child bodily to his room. When a child begins to feel that he will overstep the simple limits or become quite upset, he is encouraged to go to his room until he feels ready to rejoin the group. Furthermore, immediate attention is given the child in such situations in the form of what we call psychiatric "first aid." We attempt to make it clear that discipline is not associated with rejection, and contact with the staff continues even when activities are restricted.

Although the wards are closed wards, unsupervised outside privileges are given to as many of the children as possible, and this has the effect of creating an open ward atmosphere. Since the establishment of a stepped-up program of outside privileges, carefully administered, there have been no attempts to leave without permission, whereas these were occasional occurrences previously.

Further in management we are greatly aided by a form of self-government. Two boys elected by the boys and 2 girls by the girls act as a council which meets with the physician once a week. Here, matters of a non-medical nature which involve the chil-

dren are discussed, and very often suggestions they make are adopted. Many times disciplinary measures are submitted by this group which are quite in proportion to the misdeed and so a form of self-discipline is encouraged.

The children freely correspond with friends and relatives and are visited frequently. The parents or foster parents meet with the physician about twice each month when they are allowed to ventilate and an attempt is made to give them some insight into the situation as a whole. At present, plans are being formulated to

bring the parents together in group therapy sessions.

SUMMARY

We have attempted here to describe a children's unit as it is in operation. We hope we have made it apparent that, although many arguments can be found against establishing children's units at mental hospitals, still while we continue to have children admitted to these hospitals, by grouping them and using facilities already present, with effective organization and management, basic present needs can be fairly well satisfied.

CASTE AND MENTAL HOSPITAL ADMISSIONS IN MYSORE STATE, INDIA

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In India the caste system has always attracted the attention of observers. Caste is an exclusively Indian phenomenon, which provides every member of the caste with a system that controls his behaviour and his profession, his marriage and his friends and his birth and death rites. Several studies have been made of the relationship between psychiatric illness and caste, but few have been based on systematic research.

This paper gives an analysis of certain factors extracted from the case records of all the admissions to the Mental Hospital, Bangalore, Mysore State, in 1953.³ The influence of some other of these factors on admission rates has been considered elsewhere(1). In this report, a feature of special interest, namely caste, is considered in detail.

CASTE

Caste is not found outside of India, though social institutions analogous to caste have been described elsewhere in the world. One example is the development of plural societies, which come about through the conquest of one people by another of different race, producing a class of half-breeds with the passage of time, while the conqueror, conquered and half-breeds remain as three segregated classes. Other examples are economic and occupational institutions such as hereditary serfdom, aristocracies, social stratification according to wealth and so on. In fact the resemblance between caste and such analogous institutions is slight.

The English word caste is derived from the Portuguese word *casta*, meaning breed,

race or kind. It is easier to describe the features of a caste than to define it and most authorities would agree with the following description: A caste is a social unit in a system of segmental divisions of society. Birth determines a person's caste for life unless he be expelled from it for violation of caste rules. There is hierarchical graduation of castes, with the Brahmins at the top and the "degraded" untouchables at the bottom; the intermediate castes dispute among themselves as to their status in the hierarchy. Members of a caste cannot marry outside it. There are similar, though less rigid, restrictions on eating, drinking and social intercourse, with minute rules as to what sort of food and drink can be accepted and from what castes and what physical distance should be maintained between people of different castes. There is segregation of castes within the villages which goes hand in hand with civil and religious restrictive rules and privileges for different sections. There are fixed occupations for many castes. Although no one can change his or her caste during life, salvation is hoped for in the form of rebirth in a higher caste. The whole system turns on the prestige of the Brahmin; his presence "sanctifies" while the presence of the untouchable "pollutes."

Matters are, however, very much more complicated than would appear from this simple description. The statement that there are 4 castes in India: Brahmins (priests), Kshatriyas (warriors, kings), Vysias (merchants, traders) and Sudras (farmers, workers) is a gross over-simplification. Hut-ton(3) has pointed out that the stability of the caste system has been reinforced by the multiple and diverse origins of the people who compose it. It is believed that there are about 3,000 different castes and sub-castes in India while the census lists 57 main castes in Mysore State alone. Invasion, migration, race, colour, language and occupation have all played a part in originating the various sub-castes.

Castes and sub-castes mostly conform to

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the description given above, but some sub-castes are strictly exogamous. Again, two people of the same caste, who belong to different linguistic groups, usually cannot marry and may even observe taboos on eating and physical contact. Although the caste system has religious sanction from the priesthood only in Hinduism, the caste system affects members of other religious groups. Muslims, for example, who do not recognise the validity of the caste system often observe its taboos in practice; converts to Christianity, even in later generations, often retain their original caste for purposes of marriage. In Cochin the Jewish community is segregated into "White," "Brown" and "Black" Jews. The White Jews claim to be the "pure" descendants of migrants in the second century and regard the others as descendants of renegades by marriage or of converts and forbid them entry into their synagogue. Other taboos similar to caste taboos exist between these Jewish communities.

Complications are provided by exceptions to almost every rule; by occasional transition from one caste to another, by religious sanction for hypergamy between sub-castes, *etc.* In addition, representations to the authorities by some communities to have their status stepped up in the official records, have been occasionally successful. For instance, the Viswakarma (fishermen community in Mysore State) requested the Census Office that they should be counted among the Brahmins.

The large number of "untouchables" are now officially called "scheduled" or "depressed" castes, and form 15-25% of the population in different parts of India. The ideas of untouchability and unapproachability appear to have been first applied to the aboriginal tribes and later extended to other groups because of the theoretical impurity of certain occupations, such as scavenging, washing, fishing, *etc.* (4). The numbers have been added to by people who were expelled from a caste. A person may be out-casted for violating particular caste rules or the ethical code of religion. Thus adultery in a Nambudari (Kerala Brahmin) woman was punished by outcasting; killing a cow for most castes results in the same procedure; marriage between members of

exogamous communities results in the higher caste, and often the lower caste as well, disowning the couple, and formerly a Brahmin who failed to arrange his daughter's wedding before she attained puberty was outcasted. Even among the "scheduled" castes there is a hierarchy based on occupation.

There are also many splinter religions and sects which have usually originated from zealous reformers of the Caste System. In the course of time these have become very much like new castes of their own. Examples are the Lingayat Community in Mysore State and more recently, the Arya Samajists.

It is worth mentioning certain aspects of the Caste System which are of particular interest and value from the point of view of psychiatric research. Prior to the invasion of India by the Aryans in 1,500 B.C., the matrilineal system is believed to have been widely prevalent. This system is still accepted in Kerala and the customs associated with it survive to varying degrees all over South India. The influence on marriage customs is most pertinent. Among many castes in South India it is the prerogative of a man to marry his sister's daughter. This would be regarded as incest in North India. In Mysore State, the Vokkaligas and Lingayats, who form the major part of the population, favour uncle-niece marriage. The Brahmins regard it as unethical theoretically, but often practise it. In regard to cousin marriages restrictions vary according to caste and locality. Only cousin marriages between the children of a brother and sister are allowed. Marriage between the children of two brothers or two sisters is strictly forbidden to all Hindus. Cousin marriage is often the choice in South India, where again the practice is now quite common among Brahmins, the older of whom consider it an undesirable lapse.

In other parts of India the rules of consanguinity prohibit marriage when there is a common ancestor within the memory of either parent. Rare exceptions to all these rules are to be seen, such as social sanction to marry a half-sibling or to marry a grandchild. The practice of polyandry also occurs. Such practices have been made illegal since India has attained independence and are becoming increasingly rare. Polygamy

was legal until recently and is still practised. Legal sanction for divorce is even more recent, although forms of divorce have been present among certain castes for many years. It will be seen that there is a rich field here, not only for further studies of psychiatric disorders, but for more precise investigations into the cultural factors alleged to contribute to psychiatric breakdown. The immense variety of different social structures within a given geographical area offer an opportunity for comparative studies of incidence, prevalence and interaction with social factors not easily paralleled elsewhere.

THE HOSPITAL

This 300-bed mental hospital, which contains up to 550 patients, stands in a pleasant garden on the outskirts of the city of Bangalore. There is strict segregation of the sexes in all the activities of the patients, as custom demands. The hospital is the only inpatient unit for psychiatric patients for the whole of Mysore State⁴ with 9,079,972 inhabitants covering an area of 29,489 square miles. Distances are enormous and transport facilities poor, so that the hospital renders more service to the nearer areas. Acutely disturbed patients, in fetters, often travel to the hospital in turn by bullock carts, horse carts, on foot and by bus for many miles.

As a teaching institution the hospital enjoys an excellent reputation, and patients come from every part of India. In 1953 the hospital admitted a total of 948 patients of whom 137 were from outside Mysore State. We are concerned here only with the 811 patients admitted from Mysore State.

METHOD

We have used the official hospital case records for obtaining information about the patients. Information about the State of Mysore was taken partly from the Official Census of 1951 and partly from an interim census conducted in 1946. This became necessary because the Indian Government in 1951 discontinued the practice of previous censuses to break down population figures according to caste. Our figures on caste, therefore, were obtained from the

1946 census. In any case there is no reason to believe that the figures for 1953 would be materially different.

Of the 811 patients under consideration, 60% were men and 40% women. The first-admission rate was 7 per 100,000 of the population. The figures are very different from those obtained, for example, in England, and Wales where they are 97 per 100,000 population. The possible explanations for such differences and certain other factors, have been discussed elsewhere(2).

RESULTS AND DISCUSSION

The complexities of the caste system as outlined impose limitations on any conclusions which may be drawn from the information in the case records. Nevertheless the available figures are interesting.

Figure 1 shows the percentage of the main religious communities and castes in the general population and their admission rates. The Hindus who form 74% of the population, have the lowest admission rate. The differences in admission rates of the castes are striking. The Vaisyas are leading with 55 per 100,000 of the population, the Brahmins with 42 per 100,000 follow close, while the Kshatriyas with 15 per 100,000 while still well above the average for the Hindus, show a considerable drop. These 3 castes, in all, provide only 7-8% of the population. The Sudras and scheduled castes, on the other hand, form the greater part of the total Hindu community, but their contribution to the mental hospital admission rate is insignificant.

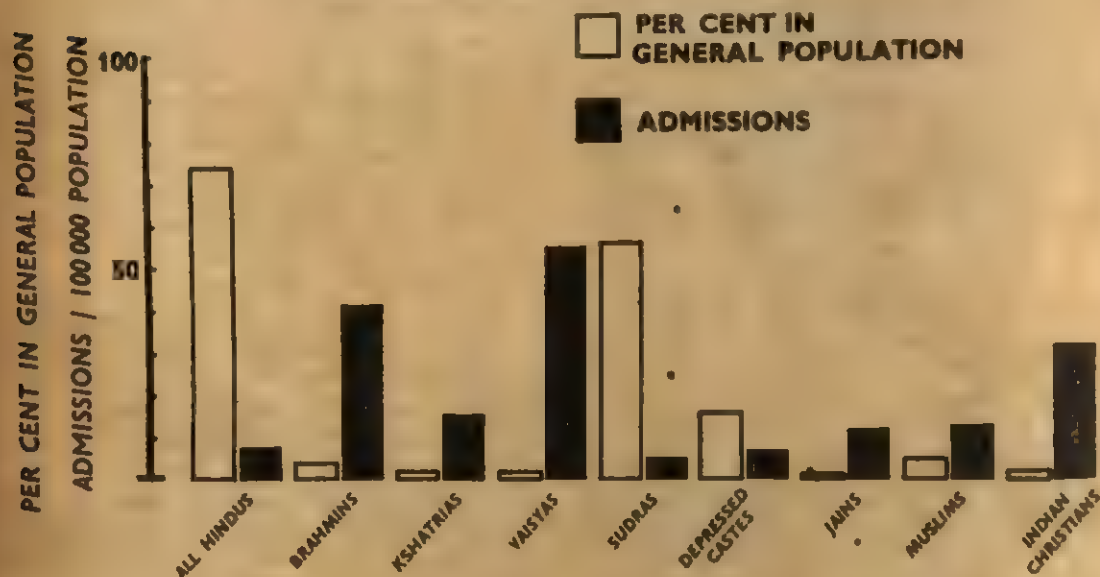
After the Vaisya and Brahmin castes, the Indian Christian community, although only 1% of the population, has the third highest admission rate with 31 admissions per 100,000 of the population. The other two minority communities, Muslims and Jains, have admission rates of 13 and 12 respectively. Jainism is an offshoot of Hinduism and originated in the 5th century B.C. at about the same time as Buddhism. In Mysore State the followers of this religion form 1.5% of the population. Most Jains live in other parts of India.

These figures have probably not much bearing on the actual incidence of mental illness in the respective communities. It would be interesting therefore to know why

⁴ Before reorganisation of the States in 1957.

FIGURE 1

GRAPH SHOWING THE RELATIVE SIZE OF THE COMMUNITIES,
AND THE ADMISSION RATE FOR EACH COMMUNITY.



the admission rates are so varied. Information on factors which might be presumed to influence admission figures was not available in the case records in any degree of precision. We therefore had recourse to the official census of 1946 for figures on aspects of the castes and communities which might throw light on the admission figures. Two factors are presented here which appear to be relevant. These are the distribution of literacy and the percentage of population in the different communities living in cities.

Literacy was briefly defined in the census as "a person's ability to read and write a letter" and assessed as such among the population, with reference to caste and community. No enquiry on this score had been made among the patients admitted to the hospital.

Figure 2 shows that some correlation exists between literacy and admission rate of each community. A higher percentage of literates in the community appears to be associated with a higher admission rate, but there are slight discrepancies. Thus the Vaisyas, with an admission rate of 55 per 100,000 of the population, should have the highest rate of literacy, but in fact, they have a lower rate of literacy (44%) than the

Brahmins (58%). The Brahmins have an admission rate of 42 per 100,000 in the population, and the highest percentage of literates among all the communities (58%). The Sudras with 11% literates and the depressed castes with 4% literates show the same discrepancy with regard to admission rates, but the figures are very small. The Indian Christian community with 36% literacy have appropriately the third highest admission rate. Between the three more literate communities on the one hand and the largely illiterate communities of Sudras and depressed castes on the other, the Kshatriyas, Jains and Muslims more or less conform to the pattern.

Figure 3 shows the percentage of literates in the different communities as they vary between the three cities and the rest of Mysore State. Three cities with 19.3% of the total population contributed 48.7% of total new admissions to the Mental Hospital in 1953. For the whole of Mysore State the literacy rate is 35% in the cities and 11% in the districts. Brahmins have a literacy rate of 69% in the cities and 55% in the districts. With these figures they have the highest literacy rate in Mysore State. Owing to non-specification in the census on this matter,

FIGURE 2

GRAPH SHOWING THE DEGREE OF LITERACY AND THE INCIDENCE OF ADMISSIONS IN VARIOUS COMMUNITIES.

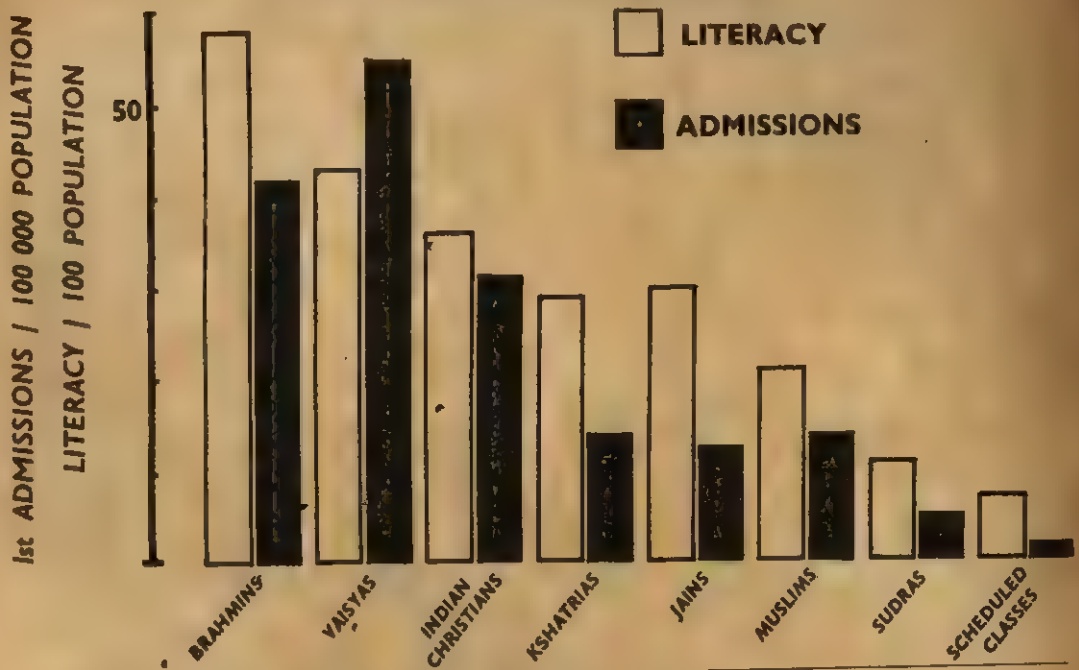
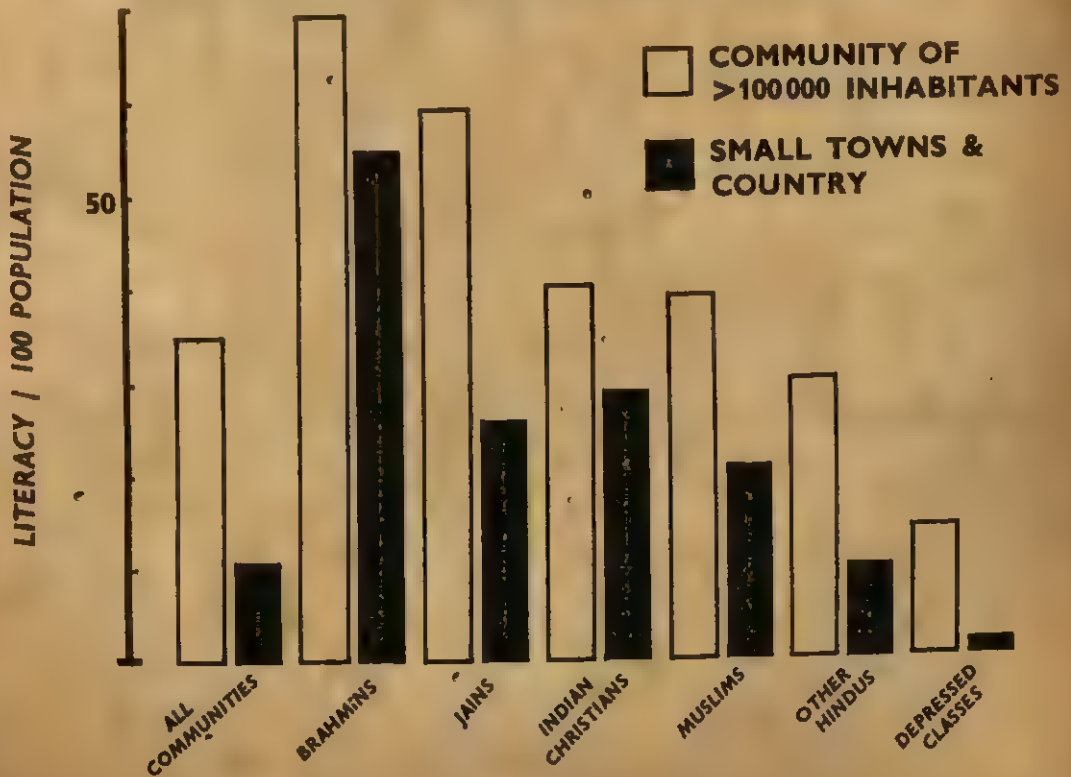


FIGURE 3

GRAPH SHOWING LITERACY PER 100 POPULATION IN EACH COMMUNITY.



we have unfortunately been forced to give the figures for Vaishyas, Kshatriyas and Sudras as one group i.e. "other Hindus." The Jains show a strikingly high literacy rate in the cities with 59%, the rate for the districts being only 26%. Two other groups show a similarly marked difference between literacy rates in cities and districts: the depressed classes with 14% and 2% respectively, and the group "other Hindus" with 30% and 10% in cities and districts respectively.

TABLE 1

Community	Residence	No. of Admissions	Admission Rate per 100,000 Population
All Hindus	Cities	181	26.8
	Districts	194	3.1
Brahmins	Cities	70	92.5
	Districts	35	16.5
Vokkaligas (Largest Sudra Caste)	Cities	15	14.3
	Districts	61	4.6
Adikarnatakas (Largest scheduled caste)	Cities	9	6.7
	Districts	7	0.7
Muslims	Cities	18	11.6
	Districts	22	5.2
Indian Christians	Cities	15	11.9
	Districts	2	3

In Table 1 the admissions to the mental hospital from the 3 cities together are compared with those from the districts, showing the communities separately. As the census reports unfortunately do not give the relevant figures for all castes, only certain communities can be shown in this table. The table includes only those admissions to the hospital who were voluntary or certified. Cases admitted for observation had to be excluded as the address entered on the case records is usually that of the referring law court instead of the domicile of the patient.

All the communities shown in Table 1 have a much higher rate of admission from the cities than from the rest of Mysore State, although, as stated before, only 19.3% of the population is accounted for by the cities. The figure for all Hindu admissions

from the cities is 9 times higher in comparison to the admission rate from the districts. The same is true of the Adikarnatakas who are the largest subdivision among the depressed or scheduled castes. The Brahmins follow next with an admission rate 6 times higher from the cities. The Vokkaligas, a peasant community form the major sub-caste of the Sudras. They and the Christians have each an admission rate 4 times higher in the cities. Muslims are only twice as frequently admitted from the cities. The figures for Christians are not really applicable as Europeans and Anglo-Indians are also included in the population figures. These 2 groups tend to live almost exclusively in the large cities. A greater discrepancy between the admission rates for city and district areas seems to be present among those communities in which a very small minority live in city areas, though this is not entirely borne out when one compares the population figures for the Vokkaligas and Brahmins. Inaccuracies in reporting in the case records may account for this. Unfortunately, figures for the number of Vaisyas resident in cities as distinct from districts were not available. They form a small community of traders and merchants and it is possible that the proportion of Vaisyas living in cities would be high.

A few conclusions may perhaps be drawn from these figures. The minority castes and communities have a higher rate of admission to the mental hospital in Mysore State than the majority castes. Literacy and residence in cities would seem to be factors which correlate with these higher admission rates. One can only hazard a guess why this should be so. Considering the difficulties in transport, facilities for admission are much better in cities. Both residence in cities and literacy would enable individuals to be more familiar with the hospital services available. As a result, confidence in hospitals and willingness to use these facilities are usually greater in the city dweller. The figures are inviting for more far reaching speculative explanations. But we feel that without further more detailed research such explanations cannot really be held with any confidence. It is perhaps interesting to compare the situation with that reflected by recent Western studies, where the higher ad-

mission rates correlate with the larger, less educated and less skilled classes, and urban rates tend to be higher than rural.

CONCLUSION

We are mainly concerned in this paper to highlight the potentialities and necessity for further research in psychiatry in India. Indisputably the caste system exerts a profound influence on every aspect of life in that country. Certain castes, notably the Brahmins and Vysias show a higher admission rate to the mental hospital than others, but further research would be required before one could account for this with confidence. It would also be interesting to know what is the actual incidence of mental illness in the different communities. Does a higher admission rate from the cities signify a higher incidence of mental illness resulting in some way from urbanisation and industrialisation or does it merely reflect the social factor of availability of care? From our experience of villages near Bangalore City it would appear that there are a great many people in rural areas with fairly severe forms of mental illness who have never been near a mental hospital.

Opinion to date is still divided on the extent to which heredity and environment influence the development of mental illness. In this respect the state of affairs in Mysore State should prove a most fruitful source of research. Various forms of inbreeding for generations are present, along with forms of strict exogamy. In addition, the segregation of castes and the variety of cultural factors seem to present us with an experimental situation already in existence.

SUMMARY

A brief outline is given of some features of the Indian caste system which may be of interest to social psychiatry. The case records of the mental hospital in Bangalore have been analysed in relation to caste of the patient and the results correlated with certain caste data in the Census reports of Mysore State. It was found that certain castes or communities like the Vysias, Brahmins and Indian Christians show a higher admission rate than other castes. It was also found that the cities of the state show a higher admission rate than the rural areas. The castes and communities which show high admission rates show a higher degree of literacy. Within each caste or community literacy is also higher in the cities than in the rural areas.

The general situation in India offers great opportunities for fruitful research in social psychiatry.

The significance of these facts and their relation to the true incidence of mental illness awaits further research, both genetic and environmental, for which the caste structure of India offers great opportunities.

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A PSYCHIATRIC CENSUS OF THE SOUTH PACIFIC

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The following figures include the important political divisions of what is commonly known as the South Pacific. They comprise the area lying between the Equator and 30 deg. S. latitude, and 135 deg. E. to 130 deg. W. longitude, which takes in with a few minor exceptions, the whole of Melanesia and southern Polynesia. The Gilbert and Ellice Islands are not included because anthropologically they belong to the more northern Micronesians.

The figures for New Zealand and Tasmania, which lie a little farther to the South, are appended for reference. The figures refer to conditions as of June 1, 1958. Those for "Patients" refer to psychiatric patients only. Those for "Population Served" are supplied by the local Medical Officers and do not necessarily correspond to the official census figures.

DISCUSSION

1. *Prevalence.* Table 1 tends to indicate that the apparent prevalence of psychiatric disorders is a direct function of the facilities offered for diagnosis and treatment, a principle which the writer has previously enunciated(1).

First, as to diagnosis, the apparent preva-

lence bears a rather direct relationship to the number of practitioners with medical training in each area. For example, in the British Solomon Islands, where there were 5 medical officers and 15 assistant medical officers(2) for a "Population served" of 112,000 (1/5600), the apparent prevalence of psychiatric disorders was 1/16000. In Papua-New Guinea, where there were 91 medical officers(2) and approximately 1,400 assistant medical officers (1/1220), the apparent prevalence was 1/3050. Thus in the area where there were about 5 times as many practitioners, the apparent prevalence was about 5 times as high. These ratios do not form a linear series throughout the area, but the tendency is sufficiently well marked to be impressive. Western Samoa falls about midway, with 4 M.O. and 40 A.M.O. for 108,000 people (1/2270) and an apparent prevalence of 1/8333.

Secondly, as to treatment, those areas which have special hospital facilities for psychiatric patients (excluding New Zealand and Tasmania) have an aggregate population served of 2,827,000 (A, B, C, D, F, J, K) and an aggregate estimated patient census of at least 1,410, yielding an apparent prevalence ratio of about 1/2000. Those areas which have no such facilities (E, G, H, I) have an aggregate population

TABLE 1
APPARENT PREVALENCE IN U. S. A. 1/200-250

Area	Patients in Hospitals	Estimated Patient Census	Population Served	Apparent Prevalence
A. Dutch New Guinea	45	90+	350,000	1/3900
B. Papua-New Guinea	26	600	1,830,000	1/3050
C. British Solomons	7	7	112,000	1/16000
D. New Caledonia	96	96+	70,000	1/730
E. New Hebrides	8	20+	52,000	1/2500
F. Fiji Islands	172	558	375,000	1/670
G. Tonga	6	30	58,000	1/1900
H. Western Samoa	5	12+	100,000	1/8333
I. American Samoa	3	8+	21,000	1/3500
J. Cook Islands	2	4-5	17,000	1/3500
K. French Oceania	12	57	73,000	1/1300
L. New Zealand	9,848	10,728	2,200,000	1/205
M. Tasmania	1,030	1,144	336,500	1/294

¹ Box 2111, Carmel, Calif.

served of about 231,000, with an estimated patient census of 68, yielding an apparent prevalence ratio of about 1/3500, about half as much. If New Zealand and Tasmania are included with the first group, the apparent prevalence in the well serviced areas rises to 1/396, about 9 times as high as the apparent prevalence in the less well serviced areas.

2. *Incidence.* None of the figures are suitable for racial comparisons except those of New Zealand. The writer has previously attempted to demonstrate that hospital admission rates indicate the tendency of various groups to seek hospitalization, rather than reflecting incidence(3). With this in mind, the first admission rates for Europeans and Maoris (Polynesians) in New Zealand can be compared for the years 1953-1956(4). The crude figures per 100,000 are 113.9 and 67.3 respectively. If these figures are adjusted by excluding senile, presenile, and arteriosclerotic psychoses, as suggested by the Medical Statistics Branch of the Department of Health in Wellington, in order to compensate for the relative preponderance of older people in the European population, they are reduced to 85.5 and 60.3 respectively. The first-admission rate of endogenous psychoses (schizophrenia and manic-depressive psychoses) are 37.6 for Europeans and 34.9 for Maoris.

EXPLANATORY NOTES

Dutch New Guinea: There is a mental hospital at Hollandia with 29 patients, and an estimated 16 admissions per year. In 1957 there were 61 psychiatric patients admitted to general hospitals. The estimated psychiatric census would be at least 90, excluding cretinism due to dietary deficiency in the unexplored mountain area (5).

Papua-New Guinea: This territory contains some of the last remaining unexplored and most primitive regions in the South Pacific. There is a mental hospital near Port Moresby with 26 patients(6). The estimated psychiatric census of the area is 600(7). The following is an example of the difficulties and errors which arise in estimating prevalence from hospital statistics.

There were 4 psychiatric patients in the

General Hospital at Rabaul, New Britain (6). One of these was from the village district of Toma. The Assistant District Officer at Toma, however, was able to recall 9 psychotic individuals in his jurisdiction.

British Solomon Islands: There is a mental hospital at Kukum, on Guadalcanal, near Honiara, with 7 male patients, no females. There are about 4 admissions per annum. No psychiatric patients are admitted to general hospitals except in transit to Kukum. No estimate of the psychiatric census is available(8).

New Caledonia: There is no separate psychiatric hospital. Patients are admitted to a general hospital with a special quarter for difficult or dangerous cases. There were 96 patients, with about 40 admissions per year. There are also patients in other general hospitals. Hospitalized patients represent only the most acutely disturbed members of the population(9). The figure used is the most conservative possible. The evidence suggests that the prevalence ratio is at least double that given, probably more than 1/365.

New Hebrides: There is a "rudimentary" mental hospital at Vila, with 4-5 admissions per year. Psychiatric admissions to general hospitals are rare. "Minor psychoses seem much more common in Tanna, where a cargo cult persists, than elsewhere"; but no figures are available(10). The psychiatric aspects of cargo cults remain to be elucidated.

Fiji Islands: The figures include 172 patients in hospital, and 200 on leave as of June 1, 1958(6, 11). I have added an estimated 184 sociopaths to these figures, calculating on ratios derived from a detailed analysis of the 1954 figures which has been published elsewhere(3).

Tonga: There is no mental hospital(6), but an "asylum" near the main jail in Nukualofa with 6 patients, and about 8 admissions per year. About 10 patients per year (principally hysteria and anxiety neuroses) are admitted to general hospitals(12).

Western Samoa: Five-six senile patients are kept confined (1956)(6). The CMO at that time stated that there were other psychiatric patients concealed in the villages. The figures given in the table, however, are derived from information supplied

by the present CMO, who also states that "only those who become troublesome are likely to come to the notice of the health authorities" (13).

American Samoa: There is no mental hospital. There are 3 psychiatric patients in the general hospital, with an admission rate of one or two per year. The census estimate is 5-6 psychotics, "perhaps many more undetected." "In evaluating mental health statistics from less developed areas . . . the figures in general will underestimate the extent of the problem." *E.g.*, those afflicted with mental disease are likely to go to their own bush doctors rather than the white doctors (14).

Cook Islands: There is a 4-bed mental hospital attached, as is common in under-developed areas, to the Tuberculosis Sanatorium, with "never more" than 2 admissions per year. There are no psychiatric patients in general hospitals (15).

French Oceania: There is a mental hospital near the general hospital in Papeete, Tahiti, with 12 patients (6). The estimate given represents psychiatric cases actually diagnosed in 1956, the latest year for which firm figures are available (16). Again, the indications are that the prevalence ratio could safely be doubled. In the opinion of the CMO, the Tahitians are a nervous race, particularly apt to express their emotional difficulties through skin disorders.

New Zealand: The census figures are for 1956, the latest available, and include 9,848 patients in hospital and 880 absent on probation or escape (4).

Tasmania: These well-organized figures include 351 Mental Defectives, 114 of whom are living in the community (17). The population is almost completely Caucasian, the last full-blooded indigene having died in 1876.

There are some island groups lying within the delineated area which have not been mentioned because they have populations of less than 5000 (2). These include the southern Line Islands, the Phoenix Islands, Nauru, Nuie, Norfolk Island, and the Tokelaus. The last are administratively included with Western Samoa.

Thanks are due to all those medical officers who gave me their assistance by supplying information about their areas,

and in many cases offered me their personal hospitality as well.

SUMMARY AND CONCLUSIONS

Figures are offered representing a psychiatric census of the South Pacific.

1. The apparent prevalence is in almost direct proportion to the ratio of practitioners with medical training in each area.

2. The apparent prevalence is related to the availability of special hospital facilities for psychiatric patients.

3. The apparent incidence (first admissions) for endogenous psychoses is approximately the same for Caucasians and Maoris (Polynesians) in New Zealand.

These findings do not contradict, and tend to support, the hypotheses (a) that the reservoir of endogenous psychoses (true prevalence) maintains a constant ratio regardless of racial, cultural, geographical, and socio-economic conditions; and (b) that psychiatric hospital figures are functions of variables other than true prevalence or incidence.

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MURDER WITHOUT APPARENT MOTIVE : A STUDY IN PERSONALITY DISORGANIZATION ¹

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In attempting to assess the criminal responsibility of murderers, the law tries to divide them (as it does all offenders) into two groups, the "sane" and the "insane." The "sane" murderer is thought of as acting upon rational motives that can be understood, though condemned, and the "insane" one, as being driven by irrational senseless motives. When rational motives are conspicuous (for example, when a man kills for personal gain) or when the irrational motives are accompanied by delusions or hallucinations, (for example, a paranoid patient who kills his fantasied persecutor), the situation presents little problem to the psychiatrist. But murderers who seem rational, coherent, and controlled, and yet whose homicidal acts have a bizarre, apparently senseless quality, pose a difficult problem, if courtroom disagreements and contradictory reports about the same offender are an index(1).

It is our thesis that the psychopathology of such murderers forms at least one specific syndrome which we shall describe. In general, these individuals are predisposed to severe lapses in ego control which makes possible the open expression of primitive violence, born out of previous, and now unconscious, traumatic experiences. The syndrome of periodic breakdown in control and its place in a homeostatic concept of mental illness has previously been described by two of the authors(2). It is the purpose of this paper to illustrate that concept in a clinical study of one type of murder.

The authors examined 4 men convicted of bizarre, apparently senseless murders, as part of an appeal process. All had been examined by psychiatrists prior to their trials, and found to be "without psychosis" and "sane." Three of the 4 were under death sentence, and one of them was serving a long prison term. Further psychiatric in-

vestigation was requested because someone in each of these cases, either the lawyer, a relative, or friend, was dissatisfied with the psychiatric explanations previously given, and asked: "How can a person, as sane as this man seems to be, commit an act as crazy as the one he was convicted of?"

DESCRIPTION OF CASES

A.—Thomas: A 31-year-old chief petty officer in charge of a hospital, while talking casually to the 9-year-old daughter of one of his superior officers, suddenly grabbed the child, choked her, and held her head under water long after she was dead. A discontinuity existed in Thomas' mind as to what happened; he could not remember the beginning of the assault, but "suddenly discovered" himself strangling his young victim.

B.—Adams: A 24-year-old corporal looking for a prostitute near a French town, was approached by a 13-year-old boy who persistently asked him to change Army scrip into French currency; when refused, the boy seemed to mock or make fun of him, whereupon he struck the boy. Adams insisted he had no intention of killing the victim and did not recall the actual killing. When Adams "found out" what he was doing, the victim's body had been severely mutilated.

C.—Mason: A 20-year-old laborer and truck driver, frightened and angry following an argument with a friend, picked up a 14-year-old boy to whom he suggested homosexual relations. The boy refused, and kept "nagging" Mason to take him back home. Mason struck the boy, and began choking him. He said he didn't intend to kill the boy, but "found" the victim was dead.

D.—Elliot: A 43-year-old married Negro soldier lapsed into a dreamlike dissociative state under the taunting and mocking of a prostitute attempting to seduce him and get his money. He struck her with a tire jack, killed her, and then mutilated and dismembered her body.

For the most part, the murderers themselves were puzzled as to why they killed their victims. Attempts to reconstruct a rational motive were unsuccessful. In each

¹ Read at the 115th annual meeting of the American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

² The Menninger Foundation, Topeka, Kan.

case, there was no gain to the murderer by killing the victim, nor was there any accompanying crime. The victims were relatively unknown to the murderers, and the method of the murder was haphazard and impromptu. In no case did the murderer use a conventional weapon, but killed either with his bare hands or whatever could immediately be pressed into use. In all instances, however, the murder was unnecessarily violent, and sometimes bizarre, and there was evidence that the assaults on the bodies continued until long after the death of the victims.

Our study was primarily "cross sectional." It consisted of a careful exploration of the patient's mental functioning in 10 to 12 hours of clinical interviews and 5 to 6 hours of psychological testing. A history of the patient, as given by himself and others, was used in an attempt to understand the early roots of the behavior disturbance, and its course throughout his life. Physical and neurological examinations, including EEG's, were also done.

HISTORICAL FINDINGS

The most uniform, and perhaps the most significant, historical finding was a long-standing, sometimes lifelong, history of erratic control over aggressive impulses. For example, 3 of the men, throughout their lives, had been frequently involved in fights which were not ordinarily altercations, and which would have become homicidal assaults if not stopped by others. Officers who observed one of these men during several such attacks reported that it required 7 to 10 strong men to restrain him until sedatives took effect, for he was able to break through strap restraints and restraining jackets. This same man had been involved in sadistic attacks on children over a period of many years; on one occasion he nearly drowned a girl in a swimming pool; on another occasion he was thought to have killed a patient while working in a hospital; and he himself gave a history of unnecessarily killing children and civilians while on duty in wartime Europe.

Despite the violence in their lives, all of the men had ego-images of themselves as physically inferior, weak, and inadequate;

and the histories revealed in each a severe degree of sexual inhibition. To all of them, adult women were threatening creatures, and in two cases, there was overt sexual perversion. All of them, too, had been concerned throughout their early years about being considered "sissies," physically undersized, or sickly.

In all 4 cases there was historical evidence of periods of altered states of consciousness, frequently in connection with the outbursts of violence. Two of the men reported severe dissociative trance-like states during which violent and bizarre behavior was seen, while the other two reported less severe, and perhaps less well-organized, amnesic episodes. During moments of actual violence, they often felt separated or isolated from themselves, as if they were watching someone else. One of them, Thomas, in relating the details of the murder said, "I knew that I was doing it, but somehow it didn't seem like me. It was as if I was watching myself do it." This feeling that it was not he who committed the murder enabled him to successfully pass a "lie detector" test, at the conclusion of which, however, he impulsively confessed.

Also seen in the historical background of all the cases was the occurrence of extreme parental violence during childhood, a finding which has also been reported in studies of murderers by Duncan, *et al.*(2). One man said he was "whipped every time I turned around." The theme of open violence dominated his early experiences. His earliest memory of himself was of almost being killed in a cotton gin; his earliest memories of his father were of him coming home beaten up, bloody, and with broken ribs. Severe corporal punishment was something he took for granted as one of the natural phenomena of life. Another of the men had many violent beatings in order to "break" him of his stammering and "fits," as well as to correct him for his allegedly "bad" behavior.

In some of these cases, the violence was associated with the sexual behavior of grown-ups. One man, Elliot, from his early life onward was an observer of much drunkenness, fighting, and promiscuity among his parental figures, and he was frequently drawn into their physical vio-

lence. Another reported that, as a child, he was frequently kept awake by the drunken fighting accompanying the sexual activity of a couple next door, whom he could observe or hear through the common wall separating their bedroom from his. Although our examination stopped considerably short of the intensive exploration of the unconscious necessary to fully confirm psychoanalytic hypotheses, our data permit the inference that the murderers probably fantasied or actually observed the primal scene as something overwhelmingly violent and sadistic.

The history relating to *extreme* violence, whether fantasied, observed in reality, or actually experienced by the child, fits in with the psychoanalytic hypothesis that the child's exposure to overwhelming stimuli, before he can master them, is closely linked to early defects in ego formation and later severe disturbances in impulse control.

In all of these cases, there was evidence of severe emotional deprivation in early life. This deprivation may have involved prolonged or recurrent absence of one or both parents; a chaotic family life in which the parents were unknown; or an outright rejection of the child by one or both parents with the child being raised by others. Although the depth of the examinational data varied, in some cases it was possible to demonstrate links to early and severe oral deprivation. For example, Mason had been a colicky, crying baby who was suddenly weaned in two days at the age of one year but remained a feeding problem for several years thereafter, during which time he ate dirt, gravel, and sand and acted as if he was constantly craving food.

Three of the men had a definite history of stuttering in childhood, and under stress, traces of this could be seen in their adult functioning. The fourth one, though without a history of speech disturbances, frequently found himself inarticulate and groping helplessly for verbal expression. This finding confirms that of Greenacre (4), who correlates early speech difficulties with the ego's failure to develop adequate mechanisms for delaying impulse discharge, or for diverting impulses into ideational and verbal, rather than motor outlets.

EXAMINATIONAL DATA

In addition to the similarity in historical findings described above, a number of common characteristics emerged in the clinical examinations. The data cited below illustrate the total functioning of these men and no single item in itself should be taken as a diagnostic sign of the personality disorder we are describing.

The most striking similarity in the examinational findings was in disturbances of impulse control. During the examination, a pattern of erratic impulsivity was observed: their speech could quickly shift from a blocked, groping, at times almost aphasic inarticulateness to an explosive gushing of words; their bodies would grow stiff with tension as they sought to contain the rising charge of affect and anxiety that would sporadically well up within them. They tended to show either extreme over-control and inhibition, or marked restlessness and hyperkinesis (pacing the room during the testing and clinical interviews was not an uncommon occurrence).

Evidence of this brittle quality of impulse control was seen clearly in the psychological tests. In general, the test picture for all of the men added up to an "all or none" pattern of functioning. Inhibition of action required great amounts of psychic energy and lacked flexibility; once controls began to weaken, the men were almost completely overwhelmed by affect, morbid fantasy, and a proneness to immediate unreflective action. The test pictures were uniformly consistent with indications of a severe ego deficiency which permits impulse to flow too directly into action and not be easily shunted into thinking or verbalization. Details of test responses are described in another paper (11).

Manifestations of a bizarre, violent, and primitive fantasy life were seen in each of the men we examined. Repetitive dreams of violently killing, mutilating, burning, or destroying others were seen; the brief TAT stories of these men were filled with a quality of primitive, murderous hostility, in some cases glibly rationalized on the basis of the victims having "provoked" their murderers, and in others precipitated by rejection or rebuff, usually implying oral deprivation. Although the hostility and de-

struction pervading their fantasy lives were easily observed, conscious fantasy or ideational activity was minimal. Brief constricted Rorschach records and meager, frequently autobiographical, TAT stories were the rule. Certainly the usual role of thinking (as a delay of, and attenuated substitute for, action) was conspicuously absent in these cases.

There was a blurring of the boundaries between fantasy and reality, and there were transient feelings of depersonalization. In one extreme example, Elliot, what really occurred, or what the man thought, or dreamed, were all blurred in a hazy, nebulous series of memories, and it was extremely difficult to construct a verifiable sequence of what actually happened. In response to a Rorschach card, for example, he began to describe not only the blot in front of him but a confused mixture of dreams, memories, and waking fantasies. Two of the men described episodes in which they thought they might have killed people, sometimes later returning to the scene of the "killing" to find a dead body, but they remained still unsure as to whether the episode was real, a dream, or a fantasy.

Evidence of disturbances in affect organization was seen. Most typically the men displayed a tendency not to experience anger or rage in association with violent aggressive action. None reported feelings of rage in connection with the murders, nor did they experience anger in any strong or pronounced way, although each of them was capable of acts of enormous and brutal aggression. The tolerance for affect and anxiety in these individuals was also extremely limited. All showed marked disturbance in dealing with color on the Rorschach test and their TAT stories showed a preponderance of violence, most typically without accompanying affect. As formulated by Rapaport, affect is conceived of as an impulse derivative, generated through the ego mechanisms of delay and control (10). For the murderers, these mechanisms were too brittle to produce the methods for "darning up" and appropriately discharging impulses that are necessary for a graduated and variegated affective experience.

Their relationships with others were of a shallow, cold nature, lending a quality of

loneliness and isolation to these men. People were scarcely real to them, in the sense of being warmly or positively (or even angrily) felt about. In their early memories and psychological test material appears the re-institution of an idealized, all-giving mother figure, but always in the context of loss or rejection, leaving the world, for these men, bleak and empty.

The 3 men under sentence of death had shallow emotions regarding their own fate and that of their victims. Guilt, depression, and remorse were strikingly absent.

The most questionable examinational finding involved the evidence relating to organic brain damage. Two of the men showed neither historical evidence, neurological nor EEG findings that would in any way be consistent with organic brain pathology—nor were there any such indications on the psychological tests. The other two men in our sample revealed ambiguous findings. One reported a history of childhood convulsions, and his associational blocking, severe constriction, and aphasic-like speech difficulty raised the question of the possibility of organic brain pathology. The psychogenic meaning of these symptoms was clearly demonstrated in some hypnotherapeutic sessions (3), and in the face of negative neurological studies, organic damage seemed ruled out. The organic findings on the other man were the most definite of our sample (previous EEG studies were "suggestive" of organic brain damage), and his history revealed a severe head injury at age 10 followed by personality disturbances of even greater severity than those noted prior to the accident.

The negative evidence, however, was not absolute, for we used only regular and sleep EEG's in search for evidence of a convulsive disorder. We did not use EEG activation techniques, such as metrazol, photic stimulation, etc. It would not be surprising, however, in view of the equivocal evidence with routine methods, to find evidence of some organic or physiological factors with more refined methods of neurophysiologic investigation (5, 7, 12).

THE ROLE OF UNCONSCIOUS MOTIVATION

The individuals described above can be considered to be murder-prone in the sense

of either carrying a surcharge of aggressive energy or having an unstable ego defense system that periodically allows the naked and archaic expression of such energy. The murderous potential can become activated, especially if some disequilibrium is already present, when the victim-to-be is unconsciously perceived as a key figure in some past traumatic configuration. The behavior, or even the mere presence, of this figure adds a stress to the unstable balance of forces that results in a sudden extreme discharge of violence, similar to the explosion that takes place when a percussion cap ignites a charge of dynamite.

One man, Mason, had such varying targets of aggression that it was impossible to delineate precisely their meaning in his unconscious conflicts from the data obtained. For Elliot, whose case included a series of hypnotherapeutic interviews, his victim seemed to have multiple unconscious meanings, although the predominant one related to his deceased girl friend, toward whom his feelings were intense but ambivalent. In Thomas, sodium amytal interviews yielded material suggesting that the victim mainly represented a dead sister, with whom he had had a conflictual, incestuous relationship. For Adams, the murder appeared to have been a deflected suicide, as impulsive murders have occasionally been interpreted (8, 9, 13). The victim represented by the murderer's own hated self-image; the young boy he killed was a camp pet who ran errands for the soldiers, just as he himself had been a mascot for the men in his father's lumber camp.

The hypothesis of unconscious motivation explains why the murderers perceived innocuous and relatively unknown victims as provocative and thereby suitable targets for aggression. But, why murder? Most people, fortunately, do not respond with murderous outbursts even under extreme provocation. The cases described, on the other hand, were predisposed to gross lapses in reality contact and extreme weakness in impulse control during periods of heightened tension and disorganization. At such times, a chance acquaintance or even a stranger was easily able to lose his "real" meaning and assume an identity in the unconscious traumatic configuration. The "old"

conflict was re-activated and aggression swiftly mounted to murderous proportions.

Such outwardly senseless attacks on relatively unknown persons are different from those arising out of protracted but conflict dominated relationships, such as with a wife, child, or parent, *e.g.* catathymic crises (13). The question of the factors involved in the "choice" of the "unknown" victim in these cases goes beyond the scope of this paper. Research now in process suggests a range of selection factors whereby, for some impulsive murderers, almost any other human being can activate the tremendous destructive potential, while for others, only a highly specific person or action is required.

A finding significant for social administration is the fact that 3 of these 4 murderers had conveyed their fears of losing control to legal officials or psychiatrists *before the murders took place*. The warnings were disregarded.

SUMMARY

In this paper we have described a number of common characteristics found in individuals who have committed impulsive senseless murders. These characteristics were: severe weakness of impulse control; blurring of the boundaries between fantasy and reality, with periods of altered states of consciousness; blunted and shallow emotional reactions; and a violent and primitive fantasy life.

This constellation seems to have grown out of a history characterized by extreme parental violence and early severe emotional deprivation. In these cases, there appeared an ego weakness which allowed the periodic breakthrough of intense aggressive impulses, sometimes of homicidal proportion.

When such apparently senseless murders occur, they are seen to be an end result of a period of increasing tension and disorganization in the murderer starting before the contact with the victim who, by fitting into the unconscious conflicts of the murderer, unwittingly serves to set into motion his homicidal potential.

It remains a task of future research to:

1. Differentiate these individuals from other murderers as well as from others with

similar disturbances but who do not kill ; 2. Weigh the significance of the individual factors described ; 3. Devise measures for identifying and effectively controlling these individuals before they commit murder.

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THE HYPOTHESIS OF RECIPROCAL COMPLEMENTARITY

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THE PROPOSITION

The hypothesis of reciprocal complementarity postulates that moral codes are as truly an integral factor in the functioning of adult civilized human beings as are the internal emotional drives; that such codes, as incorporated into the social controls, constitute a complementary element in man's emotional functioning rather than being arbitrary conventionalities which are antagonistic to it. It is a technique to demonstrate that in the relationship between his internal selfish drives and the codes of civilized conduct, man has the capacity to discriminate; to select or reject; and that he is, in consequence, a positive element in this relationship between emotional urges and social controls, and a responsible agent in the self-society matrix.

THE PREMISES

Normal Man in Civilized Society. The subject of analysis is normally intelligent man in civilized society; not idiots, not cats in boxes nor rats in mazes, not short-lived and atypical primitive groups nor the so-called wolf-children or antelope-boys supposedly raised by animals.

Codes an Integral Part of Life. That man, by his nature, cannot normally survive alone; that life in some form of society is an intrinsic factor in human functioning; and that the social codes necessary to make such a life possible are as real an element in his relationships as is water to the functioning of a fish or air to the flight of a bird.

Codes are Reciprocal and Complementary to Self. That, in principle, such codes are, in the overall pattern of civilized living, reciprocal and complementary to his self-drives rather than antagonistic to them. If one is endowed, for example, with a high degree of physical strength and quick reactions, he will find greater fulfillment in channeling his abilities through the con-

trols regulating such activities (rules for boxing, football, baseball) than he would through using his prowess to clobber old ladies.

Individual Differences. That differences in age, sex, physical and mental capacities, and endocrine functioning exist to differentiate people in their relationship to the external social and physical environments. That the aspect of this social environment which is customarily designated "The Culture" is not a unified monolith which stamps everyone into the same mold, but that individual reactions to the impress of culture are selective in terms of individual differences and in terms of the degree of awareness of the end-product to be attained. Even in relation to elements of the culture which apply to all, such as language, our response is selective in terms of what Koffka (1935) designates the "Behavioral Environment"; differentiating the child from the adult, the man from the woman, the tone-deaf and the color blind, the starving and the satiated.

Circular Causality. That human relationships characteristically involve circular causality rather than straight-line cause-and-effect. This circular causality can be either initiated, facilitated, or inhibited by any one of the several elements involved; these being muscular reactions, glandular or other chemical influences, mental coordination and mental imagery, and external stimuli, including moral codes.

Since the higher levels of the brain have the capacity to fit reactions into a pattern which is meaningful in terms of the external environment as well as in terms of the internal (bodily) environment, their functioning in the form of conscious thought is one of the elements which can initiate, facilitate, or inhibit human reactions. With this capacity, the individual is an active determining agent in his responses rather than a puppet at the mercy of unconscious drives or of unthinking indoctrination through cultural conditioning. As brain (mind) and muscles and glands (matter) are functionally interrelated, so too is the brain and the moral

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substance of the environment, the social controls.

External Homeostasis. That in a fashion similar to the process by which the various parts of the brain coordinate muscular and glandular internal reactions to keep them in balance which is called *homeostasis*, so the higher levels of the brain strive to coordinate, to make meaningful patterns of the moral codes and ethical principles which constitute the social controls. *That homeostasis exists in relation to the external social environment as well as in relation to the internal milieu of the body.*

Incomplete and Unbalanced Homeostasis. That the higher levels of the brain have the capacity to coordinate internal drives and external social imperatives into patterns which are meaningful in terms of both, fusing the internal homeostasis with the external into intellectually satisfying, emotionally gratifying, socially responsible behavior. Yet the very complexity of these higher mental levels also endows human beings with the capacity to form patterns which are meaningful to the internal tensions of muscles and glands but inconsistent with the social controls, and *vice versa*. Or, the patterns may be crazily inconsistent with both internal and external conditions. Illustrative of the first unbalanced situation would be the rationalization of unchained lust or unbridled brutishness. A situation wherein external homeostasis is attained at the expense of internal homeostasis would occur where the realities of the internal drives would be smothered by arbitrary conventions which deny their existence. Imbalance of both occurs in mental disorder, alcoholism, drug addiction and other socially defined aberrations.

Antagonisms become Complementary. That elements of reaction which are separately antagonistic combine in reciprocal and complementary relationships to form new functional syndromes.

THE ARGUMENT

The codes and precepts which constitute the social controls are made up in large measure of "Don't's" and "Thou, Shalt Not's" which appear to be antagonistic to individual desires. This impression that the social controls are antagonistic to the "nat-

ural" self-drives leads some persons to think of them as dogmatic, unrealistic, arbitrary conventions made up by old men who hate to see anyone have any fun.

To demonstrate that the social controls are (or can be) reciprocal and complementary to the individual desires rather than antagonistic to them, it is necessary to show that reactions on all levels (muscular, glandular, and mental) characteristically if not invariably involve a combination of units which are separately antagonistic but which function reciprocally to form new functional units—the functional unit in this case being human relationships in civilized society.

Though my concern is with the relationship between the person and his codes of civilized living, if this hypothesis is valid it should apply to all levels of reaction. It should explain the functioning of muscles, glands, and the brain, separately and in conjunction with each other, as well as describe the relationship between individuals and the moral codes of society.

Illustrations of the process will be drawn, therefore, from each of these types of reaction before indicating how it relates to the person and the social controls.

Muscular Functioning. In breathing, the contraction of the muscles of the thoracic diaphragm which occurs when we inhale is accompanied by a relaxation of the abdominal muscles which, conversely, tense when the diaphragm relaxes during exhalation. Such contraction of the abdominal muscles could be looked upon as being antagonistic to the relaxation of the thoracic diaphragm, but in the syndrome of breathing the two sets of muscles form a reciprocal and complementary functional unit.

Environmental factors such as atmospheric pressure and the oxygen content of the air are also vital factors in the process. Individual differences exist in the form of age, sex, the size of the thoracic cavity, strength of the intercostal muscles, shoulder muscles, neck muscles and abdominal muscles, diameter of nostrils, length of passageway, etc.

The rhythm of breathing varies in terms of exercise and rest, waking and sleeping, emotional and sexual reactions. It is not a matter of one set of muscles in these reactions being "good" and another set "bad," or

of feeling that the atmospheric pressure is a bad thing because the intercostal muscles must "work against it" in order for us to live. Without atmospheric pressure we would not exist. Nor is it a matter of inhaling being good and exhaling bad, sleep good, waking bad; exercise good, rest bad, or of these being antagonistic to each other.

Such different rhythms can best be understood through the manner in which they complement each other.

In relation to cause and effect, we cannot legitimately say that the atmospheric pressure causes breathing, because without the functioning of the muscles it would not occur. Nor can we say that the intercostal muscles cause it because they could not produce the phenomenon without the atmospheric pressure, the abdominal muscles, *etc.* Nor is the syndrome produced solely by a combination of muscles. The muscles must function reciprocally and rhythmically (rhythm, according to the hypothesis of reciprocal complementarity, is an integral factor in most reactions) and be coordinated by the central nervous system.

Causation, therefore, is circular, and the rhythm of the pattern can be initiated, facilitated, or inhibited by muscles, glands, brain, or external factors. Thus the doctor whacks the baby's butt to start the cycle, artificial respiration can restore it when stopped, perfume changes the rhythm by expanding the nostrils, stench contracts them to change the rhythm, alcoholic consumption speeds it up, then slows it, finally can stop it if enough is consumed; and a changed rhythm is an integral element in emotional and sexual reactions.

Glandular Functioning. As the muscles which separately function antagonistically combine to function reciprocally and complementarily in most bodily reactions so, too, with the glands. Again, the process is not one of simple straight-line-cause-effect, but a circular one which can be initiated, facilitated or inhibited at any one of a number of levels, involving processes of reciprocity and feed-back such as Harrison(2) describes:

By combination two or more endocrine glands can produce rhythmical or cyclical changes in the prevailing hormonal concentration, the type of hormone acting at the

target area and in response to the target organ. Thus, suppose an endocrine organ B to be under the control of endocrine organ A through mediation of hormone H-1, and that B is caused to secrete a second hormone H-2. Organ B will continue to produce H-2 as long as it is stimulated by H-1 from organ A. But let it be that a certain concentration of H-2 can influence organ A and inhibit production of H-1, and thus lead to a fall in production of H-2. Thus the mechanism reaches a certain level of activity and then cuts itself off, rather like a thermostat controlling a heater. As soon as the concentration of H-2 falls below the cut-out threshold, organ A produces hormone H-1 again, and the process is repeated.

Even, when restricted to the glandular level, most reactions are probably much more complicated than this simple illustration would indicate. For example, recent findings reveal that a drug designated JB-516 is effective as a tranquilizer, lowering blood pressure and decreasing nervous tension. Apparently the favorable effects of JB-516 are due to its inhibiting action upon the enzyme MAO (monamine oxidase). MAO functions to inhibit the accumulation of enzymes such as serotonin, which seems necessary to normal mental and bodily functioning. That is, a given level of serotonin is apparently essential for normal brain functioning, and when the level rises above the limits of tolerance the body produces MAO to inhibit the further accumulation of serotonin. Hypothetically, some persons may produce MAO in such quantities that the proper level of serotonin cannot be attained. With others, an excess of serotonin may be produced in response to either real or imagined stress. Greater quantities of MAO are then produced to compensate for the accumulation of serotonin. A continuation of real or imaginary stress could cause the organs producing serotonin to become exhausted and fail to respond to further distress signals. Meantime, MAO continues to be produced at a high level, thus inhibiting the serotonin to a degree that it falls below the needed levels. To return balance to the relationship, injections of JB-516 inhibit the MAO sufficiently to permit the serotonin component to build up again.

Such reactions (if correctly interpreted in principle, though the details may be in-

correct) would support the principle of reciprocal complementarity, but it is not thereby assumed that this is a simple cause-effect interpretation. Even with such a simple-seeming thing as the discovery of a new insecticide which functions by inhibiting the growth hormones of insects it was found that : 1. The growth hormone was secreted in the brain ; 2. But equal evidence showed that the brain hormone triggers growth glands in the prothorax ; but 3. The secretions from both sets of glands were governed by another hormone which postpones maturation until the insect has reached the proper size.

These functional connections do not simply involve *a hormone or a gland doing this or that*, but a relationship between a series of glands in terms of timing and rhythm, with this timing and rhythm being influenced by other conditions of the body and brain and by environmental factors such as food and temperature.

With humans, where the brain plays a much more vital role in coordinating the timing and rhythm (or in interfering with it), the situation, while analogous, is infinitely more complex. In man, it is generally held that the pituitary gland (hypophysis), located in the brain-case, is the master coordinating gland, yet the pituitary itself is influenced by the hypothalamic centers of the brain which, in turn, are under the influence of the cerebral cortex, and consequently the circular causal nexus involves also the external environment and mental imagery.

Mental Functioning. One reaction to such knowledge about glandular and muscular functioning might be : "What's the difference how glands or muscles interact ? The important thing is the mind. Thinking is one thing and the reaction of muscles and glands is something else." This contention is the old issue of mind over matter, psyche versus soma, spirit versus substance. The relevance here is not to contend, as some have, that the glands determine behavior, nor that undefined instincts determine behavior. Nor is it to hold, as did J. B. Watson, that thinking is merely the movement of muscles in the form of silent speech. At another extreme, the psychoanalytic notion

that some mythical "unconscious mind" controls behavior is also rejected.

Here the contention is that mind and body are interrelated and that mind is not only interrelated (affecting and being affected by) with muscles and glands but also with the social as well as the physical external environment (affecting the interpretation of it as well as being affected by it). All are thought of in terms of relationships, not as separate and discrete substances nor as ultimate causes.

When we use the term "mind" we are likely to think of it in terms of abstract thought. But such thoughts, no matter how abstract, are produced through functioning interrelationships between physical substances—the neurons of the brain. If we tend to think of mind *versus*, or separate in its functioning from the body, we must reconcile this belief with the fact that the brain contains coordinating centers for glands and muscles as well as for sight, hearing, smell and touch.

Yet, it is an oversimplification to say that mind is merely the functioning of matter or that the human brain is merely an enlarged insect-ganglion or a highly developed ape-brain. The position taken here is that the human brain is characterized by a unique difference in being capable of real abstraction and of coordinating ideas such as those embodied in the social controls as well as by the ability to coordinate internal and external physical stimuli. That the human brain is qualitatively as well as quantitatively different from that of even the highest of the infra-human animals :

A comparative study of structural and functional differentiation in the cerebral cortex throughout the mammalian series, including man, shows clearly that as the cortex increases in expanse it also undergoes regional differentiation in consequence of which more and more cortical areas can be mapped out on the basis of structural differences. These structural differences are not without functional significance ; consequently *new cortical areas may in a very real sense be regarded as new cortical organs*. Many of the cortical areas mapped out in the human cortex have no counterpart in any of the lower mammals. The human cortex, therefore, should not be regarded merely as a quantitative multiplication of the animal cortex, but it possesses

functional capacities, particularly in the psychic realm, which are not represented in any of the lower mammals(4). (My italics.)

Similarly, the late K. M. Bykov(1) summarized the numerous controlled studies of conditioning contained in *The Cerebral Cortex and the Internal Organs* by stressing that with man (and in most cases with other higher vertebrates as well) conditioning is not a reflexive reaction but a cortical reaction :

The cerebral cortex keeps adapting this inner world to the conditions of its environment at every given moment. Thus, the cerebral cortex does not only reflect the outer world but also the inner world of the animal. This reflection, however, should by no means be regarded as a passive process. It ensures the active functioning of the organs of the organism as a whole, which functioning not only maintains the organism in a state of equilibrium with its environment, but also changes this environment.

The starting and regulating cortical mechanisms are the most sensitive adjusters of the responding apparatus not only by changing their activities both qualitatively and quantitatively, but also by changing their time relations. *Stimuli conveyed from the cerebral cortex have a striking capacity for changing the rate of reaction, for establishing the sequence of events, and, if necessary, for inhibiting the course of any process.* (My italics.)

If the cerebral cortex can change the rate of reaction, establish the sequence of events and inhibit the process of conditioning, it probably does so as a function of the degree to which the new reaction fits into (or conflicts with) already established cortical patterns, i.e., on the basis of the (rationality) of the conditional response to the individual.

The next step in reasoning, which to me seems inescapable, but which the Russian investigators fail to acknowledge, is to recognize that the cortex also assimilates and coordinates moral codes as well as other elements of the external environment and that all of these must then be assimilated into a pattern which constitutes the unique-

ness of the individual; the basis for his integrity as a person. Contrary to Marxist dogma of cultural conditioning, man is an active agent in his response to social situations, affecting them as well as being influenced by them, reacting selectively, not as a puppet.

SUMMARY

If human functioning on the muscular, glandular, and mental levels characteristically involves circular causality rather than direct cause-effect and if, further, elements which separately function antagonistically combine reciprocally to complement each other in new functional nexuses, it seems reasonable to infer that a similar situation of circular causality and reciprocal complementarity exists between the individual and his moral codes. Since he has the power to assimilate concepts of morality in the cerebral cortex, and since the cortex is one of the factors which can initiate, facilitate, or inhibit his response, man is a positive and responsible agent rather than a passive puppet in the self-society nexus.

In a subsequent article I shall show how mental disorder, alcoholism, and other conditions (and their therapy) can be interpreted in terms of reciprocal complementarity. I hope to demonstrate that at least some of the seeming contradictions in such conditions which cannot be explained by conventional cause and effect nor in terms of antagonism between emotional drives and the social controls can be explained in terms of circular causality and complementarity between man and the social codes through which he functions.

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SOME PATHOLOGICAL FINDINGS IN SCHIZOPHRENICS

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Nobody knows what causes schizophrenic symptoms. In the present state of our knowledge, we can only cling to suggestions as points of departure for further investigations. The following experiences with the anatomical pathology of schizophrenics tend to reaffirm some older suggestions of pathogenesis and suggest further items for investigational attention. In addition, the material indicates a position on the syndrome-disease contention regarding schizophrenia.

MATERIAL

Fifty consecutive autopsied patients were chosen solely on the basis that they had been diagnosed as schizophrenic. Many factors were charted including items of history, standard individual data, and physical and pathological findings.

Patients were recorded as hypertensive only when pressures over 160/90 mm. Hg were noted. In most cases, more than one elevated pressure had been recorded and several had systolic pressures over 200 mm. Hg. Rheumatic heart disease was diagnosed on the presence of mitral valvular fibrosis with varying degrees of stenosis. Some of these had recent vegetations and myocardial inflammation and fibrosis, but none had typical Aschoff nodules. A few had aortic valve deformities also, but none had significant pulmonary or tricuspid valve damage. Basophilic change in the cerebral arteries was recorded when the medium sized and smaller arteries were infiltrated and surrounded by fine to coarse basophilic granules of ground glass to laminated appearance. These usually were found in the basal ganglia, dentate nuclei or both. Diagnoses of arteriosclerotic disease were based on the presence of definite arterial change plus evidence of related tissue damage. Malformations were recorded when there were decided alterations in the convolutional pattern, hypoplasias, anomalies of the circle of Willis,

or decided deformities of the calvarium. Hemangiomas were also recorded as anomalies since there were no characteristics of neoplasia. For comparison, the incidence of some of these processes was determined in 200 other randomly selected autopsies done by the same person in the same hospital during the same time period.

HYPERTENSION

Distinctly elevated blood pressures were present in 17(34%) of the schizophrenics. As might be expected, the average age of death in this group was 75 years as opposed to an average age of death of 64 years in the remaining 33 patients. As might not be expected, however, the average age of onset of psychosis was 43 years in the hypertensives as opposed to an average onset age of 34 years for those without hypertension.

It should be noted that only rarely was hypertension present on admission. The usual pattern was the development of hypertension after some time in the hospital with, frequently, a return to normotensive levels during a protracted terminal phase with cachexia. At autopsy, some had hearts within normal weight limits, even although older X-rays had shown cardiomegally. As with any group of hypertensives, considerable coronary, renal and general arteriosclerosis was present.

Brain findings were not always characteristic, but generally in severe hypertension there was hyaline thickening of the smaller cortical vessels. Conversely, when this was present, hypertension generally coincided. Less specific findings included perivascular spacing, larger artery cellular and hyaline thickening, perivascular accumulation of brown pigmented macrophages and lymphocytoid cells, minor to major areas of encephalomalacia, and some irregular gliosis, neurone loss and interstitial accumulation of crystalline brownish pigment. These changes were generally most marked in the basal ganglia and dentate nuclei. In only one case did recent major hemorrhage occur. In about one-half of the

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patients cardiac murmurs had been noted. Basophilic vascular changes occurred in some cases but by no means exclusively in this group. Two of the 4 cases of subacute bacterial endocarditis occurred in patients in whom hypertension was the major cardiovascular disease. In 2 patients recent myocardial infarcts were the proximate cause of death.

RHEUMATIC HEART DISEASE

This was present in 7 (14%) patients. Only 2 of these had a good history of rheumatic fever and one had a history suggestive of chorea. Two of the 7 rheumatics also had subacute bacterial endocarditis. Of the remaining 43 patients, one had a history of rheumatic fever and another had a history of childhood chorea. Both showed cerebral arterial changes as described below but neither presented anatomical evidence of cardiac damage. The control group contained 15 rheumatics (7.5%).

The most characteristic change in the cerebral vessels in the rheumatic group consisted of irregular cellular thickening and reticular splintering of the fine vessels of the cortex. About some of the more ragged vessels there was neurone loss and irregular gliosis. Of course, in the SBE cases there were inflammatory cell infiltrates and larger focal areas of destruction. However, even in those without SBE, focal cortical lesions of intermediary character were seen. While these changes were common, the fact that similar changes occurred in individuals not thought to be rheumatic indicates their nonspecific nature.

In order to test the degree of specificity, random slides of cortex were examined and classified as rheumatic brains or not. Two of 4 patients with rheumatic heart disease were correctly classified while 8 of 50 without rheumatic heart disease were incorrectly classified. This is hardly spectacular, and agrees with Costero's(1) finding that the adult rheumatic does not have pathognomonic findings in the brain.

MALFORMATIONS

More than minor alteration in the brain or calvarium occurred in 12 (24%) patients in the schizophrenic series as opposed to 17 (8.5%) in the nonschizophrenic group.

Anomalies of the circle of Willis are not included in these figures, but did occur in 10 patients. This is considered usual for unselected psychiatric patients(2), but is lower than the incidence found in the arteriosclerotic psychiatric patients.

Anomalies noted were two hypoplasias of the cerebrum, one cerebral cyst, one microgyria, one microgyria with fore-shortened frontal lobes, one peculiar hooking of the occipital pole due to deviation and anomalous insertion of the posterior part of the falx, one short frontal lobes with unusual increase in the periventricular ependyma, one true platybasia, one hemangioma, one foramen magnum deformity not constituting a true platybasia, one shortened flattened posterior fossa again not a true platybasia, and one alteration in the temporal lobe pattern almost resembling that seen in the mongolian brain. None of the 3 patients noted to have mental deficiencies was in this group of anomalies. However, some of the historical events in a few of these cases raised questions of the level of their intellectual abilities.

MISCELLANEOUS FINDINGS

Senile plaquing was seen only occasionally, and the only marked involvement was in a patient with rheumatic heart disease and subacute bacterial endocarditis. Histories of rather marked alcohol intake were noted in 7 patients, but there was no particular correlation with any of the other factors. Extracranial malignancies were noted in 7 patients. Traumatic brain damage was present in 4. Positive VDRL's were present in 3 patients, but there was neither clinical nor pathological evidence of central nervous system syphilis. Three patients had mental deficiency of long standing and one of these was a patient with rheumatic heart disease.

Basophilic arterial change was found in 9 (18%) of the schizophrenics and in 15% of the control group. No significant correlations were found with other mentioned factors, but it was noted that 25% of all our patients with this change had cataracts and seldom were diabetic. The youngest of these patients, who died at age 36, had a history of childhood bone infections, intermittent adult neurological findings, and

progressive personality disintegration. *Geotrichum* was isolated from his urine twice about 4 months before his death from sepsis. Multiple small foci of encephalomalacia were present at autopsy and these contained PAS staining bodies resembling one phase of the *Geotrichum* found in the pneumonia. But since brain cultures were not done, identification is quite indefinite. This organism has not been seen as a contaminant or isolated from other patients in this laboratory. It seems the patient must have harbored this organism at least 4 months and perhaps quite a bit longer. This case is of particular interest in view of Papez's(3) material on culturing vascular particles.

Twenty-three patients had evidences of arteriosclerotic brain damage and 10 of these were also recorded as hypertensive. In one patient there had been a distinct change in her behaviour 2 years before death with increasing memory defect and disorientation. This change coincided with discovery of hypertension and fundal and peripheral signs of arteriosclerosis. In most of these patients, however, there was no such distinct clinical change, and their previous modes of behaviour continued with only the more usual signs of deterioration marking progression of their disease.

One patient initially designated as schizophrenic later proved to have progressive muscular atrophy both clinically and pathologically. However, the same mental picture continued throughout the illness. The one patient who died of a ruptured saccular aneurysm of the anterior cerebral artery also had Paget's disease of the skull. There was evidence of previous old bleeding from the aneurysm. She was always dull and silly. Whether this old episode dates back 40 years to the time of her admission is, of course, unknown.

Another patient with a 40-year history had old deformities of the skull and thoracic cage, presumably rachitic. In addition there was a small parasagittal meningioma and an old subdural membrane with old cortical contusion foci. It seemed likely the meningioma was not present at the onset of the psychosis, the deformity was, and the traumatic damage was of uncertain vintage.

Only two patients had no significant

change in the brain. Both were males, both had repeated episodes of alcoholism and both had hepatic changes. The 38-year-old had a fatty liver and surprisingly small adrenal cortices. He died of aspiration with only a 2-month psychiatric illness. The 46-year-old had a 21 year history of psychosis but had been out of the hospital frequently, only to return after another bout of alcoholism. He had a cholangiolitis. He also had an anomalous circle of Willis and died of aspiration after head trauma.

DISCUSSION

Two facts are apparent from this material: 1. Findings are present and 2. The findings are diverse. With full recognition that the presence of findings does not indicate casual relationship, we must still consider these as suggestions of possible cause.

In this series, the incidence of rheumatic heart disease as a possible indicator of rheumatic brain disease is about double in the schizophrenics as opposed to the non-schizophrenics. Most people grant that rheumatic heart disease is directly associated with psychosis in some few cases and that chorea is a result of rheumatic fever in some children. It should be noted that the damage is mainly an arteritis as in syphilis and that embolic damage is secondary in importance. This incidence, plus the factors of known relationships and anatomical findings, makes it likely that rheumatic cerebral arteritis is a real factor in the production of schizophrenic symptoms in some patients.

This is not a simple academic contention. If this is true, then appropriate antibiotic or chemotherapeutic prophylactic and treatment programs might lower the incidence of such disease and perhaps prevent relapses. The results of such a program might shed more light on the truth of the contention. Analyses of current rheumatic fever prophylaxis programs as to later incidence of psychosis in those who did and did not follow the regimen might provide further information.

Hypertensive disease is not generally considered related to schizophrenia. This series at least indicates that hypertension is not rare in these patients. The difference in average age of onset of psychosis in those with and without hypertension would seem

to indicate that these are indeed two different groups. It can be hypothesized that a common antecedent was present which led to the development of both psychosis and hypertension. However, the curves in the two age groups overlap considerably so further information awaits greater experience. The incidence of malformations in this group was almost 3 times that in the non-schizophrenics. On this statistical basis malformations must be considered in enumerating possible causal factors. There is no information as to the incidence of malformations in relatives of these patients, but correlation of such findings might shed more light on possible genetic factors in the pathogenesis of schizophrenia. As indicated, the incidence of basophilic arterial change was not greatly different in the control and schizophrenic groups. But the high frequency of cataracts noted in these patients might indicate a general disease state such as some alteration in epinephrine metabolism.

Some of the individual cases cited suggest that the pathological findings are related to the schizophrenic symptoms. These include the rachitic patient, the lady with the old and recent rupture of the saccular aneurysm, the woman with the progressive muscular atrophy, and the man with the old bone and recent generalized infections with the encephalomalacia and the Geotrichum.

CONCLUSIONS

The diverse findings in this group of schizophrenics tend to support the idea that schizophrenia is, indeed, a syndrome. If this is really so, then attempts to pick groups of patients for clinical research projects

must involve unrecognized heterogeneity, since most of these conditions were unrecognized in life. Research based on such an initial error might be invalid.

The most frequent findings in this group of patients are abnormalities in vessels and grosser features of architecture. This may indicate that too much attention has been paid to neurones and glia. No "black box" works even with intact components unless it is plugged in. The energy source for the brain must also be intact. "Black boxes" do not work in groups unless the components are properly aligned. Malformations do sometime result in defective mentation.

Since these statements are as valid as any other current suggestions, it is necessary to include these anatomical changes in any consideration of pathogenesis in the patients called "schizophrenic."

SUMMARY

Pathological and clinical findings were reviewed in 50 schizophrenic patients. Only 2, both alcoholics, had no notable pathological brain abnormalities. Vascular diseases and malformations of the brain were particularly frequent. The diversity of findings was a prominent feature, and tended to support the thesis that schizophrenia is a syndromic diagnosis. The series suggests that some of the findings may be causally related to the schizophrenic symptoms.

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URINARY EXCRETION OF TRYPTOPHAN METABOLITES BY SCHIZOPHRENIC INDIVIDUALS

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In 1951, Young, *et al.*(1) reported that schizophrenic individuals excrete larger quantities of a material which couples with diazotized sulfanilic acid than do normal individuals. McGreer, *et al.* (2, 3) have published similar findings. All these studies utilized qualitative paper chromatographic procedures. Recently, nicotinamide has been implicated in the schizophrenic process by the report of Hoffer, *et al.*(4) that this compound alleviates the symptoms of schizophrenia. Wooley(5) suggests that nicotinamide elicits a "tranquilizing" effect. Nicotinamide is derived from dietary tryptophan and nicotinic acid, and a large part of urinary aromatic amines, which respond to diazotization and coupling, are also products of tryptophan metabolism. Therefore, an understanding of the significance of these observations to schizophrenia should be obtained through a study of tryptophan utilization by schizophrenic individuals.²

METHODS

Schizophrenic subjects were selected for this study by the psychiatric staff upon admittance to the hospital. The patients were females, Caucasian and Negro ranging in age from 17 to 36 years. They had received no drugs prior to or during the time of experiment. Controls in the same age, sex and race classes were chosen from laboratory and office personnel.

A basal 24-hour urine sample was collected from each subject. At the end of the 24-hour period, 0.4 mole of L-tryptophan per Kg. of body weight was given orally in a milkshake and a second 24-hour urine specimen was collected. Creatinine values were used as criteria for completeness of

collection. The urine was stored at 4° C. under toluene until the analyses were completed (7 to 10 days).

Price, *et al.*(6) have shown that a constant diet is not necessary for quantitative studies on the metabolism of supplemental doses of tryptophan. Therefore, the diets of patients and controls were self-selected. However, they were cautioned to avoid excesses of food or liquids.

Five diazotizable fractions, including anthranilic acid glucuronide, o-aminohippuric acid, acetyl-kynurenine, kynurenine and an unidentified fraction were isolated from the urines by fractionation on Dowex 50 columns. Each fraction was analyzed colorimetrically by diazotization with nitrous acid and coupling with N-1-naphthylethylenediamine. The entire procedure was accomplished as directed by Brown and Price(7). Synthetic samples of the first three compounds in this group were not available for recovery experiments. Recoveries of kynurenine were 98%. Total diazotizable substance was determined on diluted urine samples.

Kynurenic acid and xanthurenic acid were isolated from Dowex 50 columns and aliquots from the eluants were analyzed for kynurenic acid fluorometrically, according to Satoh, *et al.*(8). In our hands, the procedure of Satoh, *et al.* for the fluorometric determination of xanthurenic acid was impracticable since kynurenic acid interfered. Xanthurenic acid was, therefore, determined colorimetrically by the method of Rosen, *et al.*(9), after concentration of the eluant from the Dowex 50 column. Recoveries of kynurenic acid were 90% and xanthurenic acid 58%.

Quinaldic acid(7), and N-methyl-2-pyridone-5-carboxamide(10) were determined as outlined by Price and his co-workers. Recoveries of synthetic material were 71 and 82% respectively.

All analyses on urine from subjects receiving tryptophan and on basal urines were done in duplicate. Since some of the

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methods gave low recoveries of added synthetic material, internal standards were run with each analysis and the results corrected accordingly.

DISCUSSION

The data obtained from the described experiments are shown in Table 1. Metabolic excretion varied widely from individual to individual and this tendency was most evident after the subjects had received a test dose of tryptophan.

Statistical evaluation of the data in Table 1 was accomplished through the small sample, nonparametric rank test (Wilcoxon T Test)(11) using a confidence level of 1%. With the exception of the excretion of N-methyl-2-pyridone-5-carboxamide, no significant differences in the excretion of metabolites by patients and controls were observed. The excretion of N-methyl-2-pyridone-5-carboxamide by patients not receiving tryptophan was shown to be significantly less than the normal controls. No significant differences in the excretion of this compound by the two groups were observed after an oral dose of tryptophan.

Interpretation of data collected from studies on schizophrenics is difficult and as Kety(12) has so elegantly pointed out, the sources of error are wide and sometimes subtle. With these limitations in mind, two possible explanations for the observed excretion pattern of N-methyl-2-pyridone-5-carboxamide are worth considering. The decreased basal output could be due to dietary factors which are obscured by supplementing tryptophan. N-methyl-2-pyridone-5-carboxamide is the chief degradation product of nicotinamide and the pyridine nucleotides, all of which are derived from dietary tryptophan.

On the other hand, the mechanism by which nicotinamide and its derivatives are converted to the pyridone may be malfunctioning in schizophrenics. This idea is difficult to reconcile with the data obtained from patients and controls after an oral dose of tryptophan. If the assumption is made, however, that the degradation of nicotinamide is inhibited in the schizophrenic,

a large oral dose of tryptophan could overcome the inhibition and obscure the differences noted in the basal urines. In view of the work by Woolley and Hoffer, *et al.*, mentioned previously, the latter hypothesis deserves further investigation.

Under the experimental conditions reported here, no significant differences were found in the excretion of diazotizable compounds by schizophrenic patients as compared to normal controls, either at the basal level or after oral doses of tryptophan.

SUMMARY

Urine from schizophrenic patients and normal controls has been analyzed for metabolites of tryptophan, before and after oral doses of this compound. With the exception of the basal excretion of N-methyl-2-pyridone-5-carboxamide, no significant differences in the urinary excretions of tryptophan metabolites has been found.

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PROBLEMS IN APPLICATION OF THE BASIC CRITERIA OF SCHIZOPHRENIA

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INTRODUCTION AND BACKGROUND MATERIAL

From 1885 to 1897 at the psychiatric hospital in Rheinau, Switzerland, and subsequently at the Burgholtzli, Eugen Bleuler's talents turned to a quarter century of scholarly observations which in 1911 culminated in his classic monograph on the group of schizophrenias (1). The half century since has magnified the importance of this work to the therapist because it permits of diagnosis and intervention before the patient disorganizes to the point of blatant symptomatology.

As a result, steadily increasing numbers of cases have been diagnosed as schizophrenic as the decades have passed. The more sophisticated the setting, the more academic the hospital, the more trained and experienced the psychiatrist, the greater is the tendency to observe the more subtle manifestations of Bleuler's 4 fundamental symptoms: thinking difficulty re: continuity of associations, affect disturbances, autism, and ambivalence.

The following questions arise: Is there a point of diminishing returns? If a given patient is sufficiently "well-organized," i.e., of sufficient "ego strength" so that one must strain at subtle nuances in order to establish a schizophrenic diagnosis, then how valuable is the diagnosis for all descriptive, categorical, therapeutic, and prognostic purposes? In short, are all patients who pass the test on the 4 fundamental criteria (regardless of how low the score) really candidates for manifesting the "accessory symptoms" of further deterioration?

THE CONCEPT OF MEANINGLESS DIAGNOSIS

In general the clinician is interested in the diagnosis of schizophrenia in order to help answer certain questions about the patient (2, 3, 4): 1. His reality testing. 2. Therapeutic technique required. 3. Length of treatment and goals of therapy. 4. Po-

tential for disorganizing. 5. Prognosis. Do all patients now considered schizophrenic by private therapists, have notably faulty reality testing? Do all patients who show Bleuler's fundamental symptoms, however mildly, thereby require radically different therapeutic approach, or merely individual variations as treatment progresses, as is true of all other cases? Does a patient with chief complaint of uncomfortable anxiety, who gets classified as schizophrenic only after several weeks of careful observation, necessarily require lengthier treatment than a chronic obsessive-compulsive? Or should the goals be less ambitious? Should such a person invariably be considered a prospect for disorganization? Is prognosis markedly changed by the new "findings"? If in the categories of schizophrenia we include individual cases for which we must answer the above questions in the negative, then that diagnosis begins to lose meaning for the clinician.

Fortunately, most experienced therapists circumvent the issue by evaluating each individual patient on each individual question. It is possible that the most feasible method of diagnosis in these cases is the one or two paragraph description of psychopathology.

THE PROBLEMS OF DIFFERENTIAL DIAGNOSIS

In addition to the chances of meaningless diagnosis there are the pitfalls of misdiagnosis:

1. The association difficulty (5): In schizophrenia the loosening of associations is due to distraction from below. Reality is not real enough to command full attention without a tremendous cost in energy. The "ego" is not strong enough to keep unconscious symbolisms and tangential associations from constantly coming to the fore and interfering. Hence the "blocking," the "eccentricity," and the difficulty of understanding verbal and behavioral productions of the severe schizophrenic. In less severe cases, this thinking difficulty due to dis-

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traction from below may be confused quite easily with non-schizophrenic concentration difficulty due to distraction by anxiety, fear, tension, or preoccupation. In fact it may be impossible to differentiate the two concepts.

2. The affect difficulty(6) : In the schizophrenic it may be a good deal less apparent than in the depressive or the hysteric, and a good deal less "inappropriate" than in the case of the "nervous laugh" or the affect displacement.

3. Autism(7) : Frequently this represents the phenomenon of the injured creature retiring to a corner to lick his wounds. The "autism" thus found in reactive tension or depression may be almost impossible to differentiate from the watching-of-the-show-within of the schizophrenic. At any rate, this symptom usually is associated with the clinical picture of "introversion," whereas many schizophrenics are "extra-verts."

4. Ambivalence(8)* : In the schizophrenic this theoretically results from trouble with control of questionable or unacceptable desires or ideas, with resulting apparently impulsive or contradictory behavior, verbalization, or feelings. In less severe forms of the illness it is almost impossible to differentiate from all the other forms of ambivalence so common in the human experience.

Therefore, we may say that the more the clinician must strain to establish the diagnosis of schizophrenia, the greater becomes the danger not only of meaningless diagnosis, but of misdiagnosis as well.

CASE HISTORIES

I should like to illustrate with the case histories of 4 patients I treated while in practice in New York City during the past 7 years.

Case 1.—A.B. presented with chief complaint of insomnia, tension, and preoccupation with encroaching baldness. He was a 26-year-old unmarried white accountant; the youngest of 4 siblings, and only male child of an authoritarian policeman and a would-be ballerina. In therapy with one psychiatrist 5 months, he discontinued because discussion was getting close to uncomfortable sexual material. He then undertook treatment with a second psychiatrist for 4 months, but this time stopped because no

uncomfortable areas were touched and therefore "the doctor must be incompetent." Both diagnosed schizophrenia, one "paranoid, ambulatory," and the other "mixed, incipient."

I perceived associational thinking difficulty during the first 35 interview hours. Furthermore, although A.B.'s intelligence was well above average, his handling of abstract conceptualization (proverbs, categories, and comparative definitions) on clinical psychiatric examination scored as poor. Minnesota Multiphasic Personality Inventory test scored plus 36 (T-score 75) on schizophrenic scale with good reliability and validity indices. Preoccupation with hair loss impressed me as obsessive and perhaps delusional. Hairline and thickness were well above average. (Later comparison with photographs showed there actually had been a very slight but even recession of hairline over a 3 to 4-year period, so I could not quite call this preoccupation a delusion.) He would display strong anger when discussing certain minor activities either of his employer or of his girl friend. These reactions appeared inappropriate by all external yardsticks but quite appropriate in terms of the patient's own inner associations. A.B. admitted having no close male friends. He would sit in his lounge chair for hours on end immersed in a rich and grandiose fantasy life. He displayed marked ambivalence toward the few important individuals in his ken: family, employer, and girl friend. I concurred in the diagnosis of schizophrenia.

Then during the fifth month of our association, the following happened within a 3-week period: 1. A.B.'s girl friend left him after an argument in which she cast aspersions on his virility, and 2. He was the only employee in his department who received no Christmas bonus. These events hit upon dynamically sensitive areas: the questions of virility, rejection, and fear of authority. He reacted with a noticeable increase of tension and depression but no essential change in fantasy life, no inability to work, no deterioration of behavior, no clinical increase of thinking difficulty, and no significant change in schizophrenic scale of the MMPL. Exploration showed that these events did function to provide some masochistic gratification, as well as to provide some reality-validation of low self-esteem. In addition, they served to release the patient from what amounted to a burden: supporting a close heterosexual relationship. Nevertheless, these ameliorating factors were minimal; the overall effect was severely traumatic. Certainly there was no paradox in the patient's reaction; he did not improve; symptomatology definitely intensified,

but not in the "schizophrenic" direction.

Three months later, before recovery had progressed to the pre-traumatic level, the following events happened to A.B. within a single month:

1. His left cheek was slashed for a length of four inches by street gangs. A scar was inevitable.

2. He lost a considerable amount of his savings in the stock market decline of 1957. These occurrences also hit upon dynamically sensitive areas: physical appearance, which the patient regarded as one of his few remaining assets; "castration" anxiety; and great fear of material insecurity (an important symbol). This time too, reaction was in terms of tension and depression without any change in his "schizophrenic" direction.

Looking for sources of stability one could venture that despite all these traumata, and despite difficult work relationships, A.B. did have the ego resources inherent in the day-to-day compulsive performance of his accounting job. The fact is, however, that before entering therapy, he had come through periods of unemployment which lasted as long as 6 months without any extraordinary discomfort. Also, none of these situations was continuous in the sense that supporting a family is continuous over a period of years. True, such a continuing experience might slowly disorganize a "borderline schizophrenic"; but the patient could with perhaps as much probability, develop acting-out type defenses as stress intensified, and thus reach a level of "adjustment" short of disorganization.

Case 2.—C.D. was a 29-year-old, white, commercial artist, the only child of a lawyer of limited success and a woman who married for security while still enamored of another man. Chief complaint: ambivalence *per se*. Considered a very personable girl who frequently reciprocated the interest of her many male suitors, she inevitably would suffer extreme conflict before reaching the point of matrimony. The two marriages she did consummate ended in divorce "because I always became so hypercritical." All close relationships were tenuous because they were mixed with strong antagonism. I was impressed with associational thinking difficulty during the interviews. Clinical tests of abstract conceptualization showed many spoiled responses. Rorschach examination uncovered an intense bizarre fantasy life compatible with schizo-

phrenia. MMPI test scored plus 38 (T-score 74) on the schizophrenic scale with good reliability and validity indices (hysteria score was within normal limits and patient was not especially erotic, frigid, or dramatic). There was both depersonalization and derealization. Affect appeared blunted in all directions. My diagnostic impression was of schizophrenia.

During her first year of therapy the fashion magazine which employed C.D. was discontinued. This meant loss of two emotional supports: 1. A very real job gratification and 2. Status and material symbols; her \$12,000 annual salary had enabled C.D. as a young unmarried woman to partake of many of the material graces of midtown Manhattan. After this loss she began to engage in sexual promiscuity. The therapeutic process was utilized to modify this symptom. She suffered some accentuation of tension and depression. The incident provided no ameliorating factors whatsoever. Nevertheless, there was no essential change in fantasy life, no deterioration of the routine details of daily behavior, no clinical increase of thinking difficulty, no measurable change in abstract conceptualization, no significant change in schizophrenic scale of MMPI, no observable difference in depersonalization or derealization, and no change in affect except for some depression and some anxiety over finances. For the most basic expenses her parents grudgingly came to her rescue so there was no stimulus to cope with a really intrusive reality. Any jobs proffered paid much less than her previous position. In this setting I was unsuccessful in preventing C.D. from marrying a man in his 50's (for whom she felt no attraction) frankly because he was rich. During the first 8 to 9 months of this relationship, her hypercritical tendency grew, but then reached a plateau, and a working equilibrium was established. C.D. manifested ambivalence of the usual degree and scope which she brought to all her relationships, but no more than that. She carried uncomfortable guilt feelings and moderate depression but, again, at no time displayed any change in a "schizophrenic" direction. Fantasy life, clinical thinking difficulty, Minnesota Multiphasic performance, routine behavior, abstract conceptualization, and affect range had remained constant.

Apparently, one major reason this marriage did not also end in divorce was that this husband, for reasons of his own (not the least of which was age difference) was much more tolerant of what C.D. had to hand out. Therapy continued until 1957, at which time the marriage was two years old and stabilized. A semiannual follow-up through 1959 continued

to show a "stable" situation with some lifting of the chronic mild depression and guilt.

It may be ventured that this narcissistic woman never had been threatened with loss of physical attractiveness, a factor which conceivably might disorganize her. C.D. was not physically attractive, nor was natural physical attractiveness part of her self-image. Her assets were personability, flair for wearing clothes, intelligence, and artistic talent.

Case 3.—E.F. presented with chief complaint of a multiplicity of physical symptoms, recognized by internists as well as by herself as "psychosomatic." She was a 31-year-old white housewife, the second of 3 children (and older daughter) of a small-town merchant. Her mother died when she was 3 and father remarried a year later, this time to an active business woman. E.F. had been married for 6 years to an advertising copywriter whose income was comfortable but not quite as high as that of other members of her family. The patient's symptoms, which began with the birth of her son 4 years previously, had been neuro-muscular, cardio-vascular, respiratory, gastro-intestinal, and dermatologic. A reputable psychological testing service had administered to her a complete diagnostic battery before she started therapy and concluded that E.F. was an "early schizophrenic." This battery was compounded of clinical psychiatric examination, MMPI, Rorschach, and Thematic Apperception Test. I obtained a Minnesota Multiphasic score of 46 (T score 86) on the schizophrenic scale with good reliability and validity indices. Clinical examination of abstract thinking showed spoiled response to proverbs testing, and poor handling of categories and comparative definitions. Judgment was poor. Overt anxiety was minimal; concentration was adequate; nevertheless, there was much blocking on many topics. Affect appeared blunted. The first 30 interview hours strengthened my impression of associational thinking difficulty. In addition, there were periods of actual rage whenever discussion turned to certain locations, dates, acquaintances, or events. This rage was appropriate only in terms of the sudden reality of her own associations. E.F.'s impulsive reversibility on almost any issue on which she happened to take a strong stand, early observed in interviews, was confirmed by her husband and by the patient herself. I concurred in the diagnostic impression of schizophrenia.

During E.F.'s second year of therapy, her son contracted a case of poliomyelitis which

left him with residual quadriceps, peroneus, and tibialis impairment. Because of tremendous ambivalence toward the child, she reacted with great guilt. However, during the acute stages of his illness, E.F. was too distracted by the demands of reality to show an intensification of psychopathology. As acute illness gave way to chronic infirmity, she became more and more depressed. Somatic symptoms decreased as depression increased. I had anticipated this sequence as part of a well-known road to schizophrenic disorganization. Nevertheless, at no time did Minnesota score change significantly, nor did clinical examination of abstract thinking. There was no deterioration of behavior, no change of fantasy content, no perceptible change in thinking difficulty, no increase of frequency or intensity of inappropriate rage and no noted increase of ambivalence as gauged by the "impulsive reversibility" of her attitude to people and issues. The only augmentation of psychopathology was in the non-schizophrenic realm of depressed mood, retardation, and non-psychotic self-depreciation.

After 4 months, depression began to lift and somatic complaints began to return. (The latter faded in due course of therapy over another year.)

When her son contracted poliomyelitis, E. F. had been in therapy for over a year, thus having established enough of a therapeutic relationship to permit either the working through or supporting of a crisis which otherwise might have led to disorganization. But it must be pointed out that adverse changes did occur despite the therapeutic relationship, that at first these changes did look like the approach to overt schizophrenic symptomatology, but were confined completely to non-schizophrenic manifestations instead.

Case 4.—G.H. presented with chief complaint of impotence, of one-year duration. He was a 31-year-old white sales executive, with Stanford Binet score of 120; the older of two children (and only son) of a housemaid who had been widowed since the patient was 4 years old. G.H. started out as a studious boy but never finished high school, in part because of family financial pressures, and in part as an over-compensatory surrender to his anti-intellectual "civil-service-and-baseball" lower income urban milieu. At 22 he married a nurse one year his senior; the couple had 3 sons and 1 daughter. She was a "sweet" woman who

came from the same socio-economic background as the patient, but also shared his intellectual tastes.

I perceived an associational thinking difficulty during the first 25 hours of therapy. Clinical examination of abstract conceptualization scored poorly. MMPI tests scored 40 on schizophrenic scale (T score 84) with good reliability and validity indices. Frequently, G.H. would be distracted by sudden strong emotions associated with ordinary daily events. For example, he came home from the office one evening after submitting an expense sheet which was slightly more "padded" than usual. Upon entering, he happened to glance at the "rabbit ears" television antenna and suddenly was overcome with fright. Subsequently, it came to mind that the reason for this fright was an association of the antenna to the two punitive arms of an avenging authority. On another occasion while pulling the lever of a cigarette dispensing machine, G.H. was suddenly engulfed by depression. Several minutes later it occurred to him that the reason for this depression was that the last time he used this machine, 4 years previously, an unpleasant episode took place on the same day.

The symptom of impotence in itself proved to be most immediately involved with strong feelings of ambivalence toward his wife. Fatigue was a problem, and it was disclosed that maintaining an extravert façade for his sales executive position cost G.H. copious amounts of energy. Furthermore, it was the only self-image which was acceptable. He stated that he spent many hours alone in fantasy (of grandiose content). My diagnostic impression was schizophrenia.

Early in his second year of therapy G.H.'s corporation changed administrations. G.H. was demoted in position and pay, a factor which traumatized the dynamically sensitive area of "castration" anxiety and acceptance of identity. There were no ameliorating factors because the new position demanded just as much façade responsibility, and expenditure of energy. The patient reacted with tension for 3 months and then depression for another 4. During this period of reaction there was no observable change in thinking difficulty, in abstract conceptualization, in Minnesota Multiphasic score, in intensity or content of fantasy life, or in ability to work. There was no noted deterioration of behavior or increase of frequency or severity of episodes of inappropriate affect. Ambivalence toward his wife remained on an even keel for the time being. In short, G.H. did sustain increase of psychopathology

as a reaction to a traumatic situation, but not at all in his "schizophrenic" area.

CONCLUSIONS AND SUMMARY

Four cases were diagnosed as schizophrenic by careful observation and documentation. The patients had the following in common :

1. By all symptoms no schizophrenia was immediately apparent. It required time and attention to establish the diagnosis in all cases. But then it remained firmly established by the basic accepted criteria.

2. The patients were persons of good intelligence and had other assets as well. They tended to mobilize many mechanisms of defense as "ego" structure threatened to "weaken" further. These consisted both of additional neurotic defenses and some tendency toward "acting-out," but no change was manifested in areas considered schizophrenic.

Therefore, we are considering a category of individuals who belong to the group of schizophrenias according to legitimate definition, but apparently no more capable of disorganization, or display of blatant "accessory" symptoms, than the next person.

In each of these instances, schizophrenic psychopathology comprised one part of the total picture, but did not thereby characterize the case. This concept differs from Hoch's "pseudoneurotic schizophrenia" (9) in that the latter describes an illness which is schizophrenic for all important clinical purposes : disorganization potential, therapeutic technique required, goals of therapy, and prognosis. By way of contrast, perhaps the best diagnostic approach to the above "pseudoschizophrenic neurotic" cases is the one or two paragraph description of psychopathology, with all factors evaluated on an individual basis.

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CLINICAL NOTES

METHOXYPROMAZINE IN CHRONIC SCHIZOPHRENIA

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AND THOMAS H. MCGAVACK, M.D.¹

Eighteen chronic schizophrenic men, median age 62, were subjects of a double blind study of the effects of methoxypromazine on adjustment.

Evaluation of the patients was accomplished with 6 periods of evaluation: 1. A baseline period of 3 weeks in which the patients were maintained on their previous regime, 2. A drug free period of 5 weeks, 3. An experimental period of 9 weeks in which half the patients received active methoxypromazine and half received placebos, 4. A second experimental period of 6 weeks in which those subjects who had received placebos received the active drug and *vice versa*, 5. A drug free period of 24 days, 6. A third experimental period in which those who received placebos in the second experimental period were given the active drug and *vice versa*.

The daily doses all given orally ranged from 150 to 600 mg., but none was below 300 mg. during the second and third experimental periods. Increases of dosage were made at one to two week intervals.

The quantitative evaluation was accomplished with a variety of techniques and tests. A series of rating scales, called the Ward Adjustment Scale, were adopted and modified for use with our particular chronic hospital patients from such charts as the Lorr Multidimensional Scale.

A weekly rating form tapping three facets of patient behavior was devised: 1. Facial expression, 2. Patient's attitude toward personnel, and 3. Cooperation. This was used by the physician on weekly rounds and by the nursing assistant.

Various psychological tests and techniques were also employed. The Porteus

Maze Test was selected as measuring foresight or planning ability. The Picture Discrimination Test assessed a form of judgment usually deficient in schizophrenics. The Color Naming Test was used to determine changes in mental speed. Standard questions on orientation for time, place and person were also asked by the nursing assistant and responses to these were quantified.

RESULTS

Though 18 patients were initially selected for these studies, only 12 were able to complete them. Two became seriously ill and 4 developed severe problems in adjustment.

Except in the third experimental period, statistical analysis of the data from the remaining 12 subjects failed to yield any evidence of improvement while taking methoxypromazine. In this period, patients taking methoxypromazine scored somewhat higher on the Ward Adjustment Scale than those receiving a placebo. This indicated that they were manifesting more psychological and somatic symptoms than the control group.

No significant unpleasant symptoms or side effects were observed in any subject. There were no abnormal fluctuations of pulse, temperature, blood pressure or weight which could be attributed to the drug. In the following laboratory tests completed weekly, no abnormal findings appeared: urinalysis, serum bilirubin, and complete blood count.

The present findings are consistent with those of other observers, and indicate that chronic schizophrenics are less responsive than acute schizophrenics to the therapeutic action of tranquilizing medications.

SUMMARY

No appreciable change in adjustment was

¹ From the VA Center, Martinsburg, W. Va. The drug and placebos were furnished through the courtesy of Lederle Laboratories under the trade name, Methopromazine.

noted in 12 chronically ill schizophrenics who were subjects of a 6-month double blind study with methoxypromazine. No

toxic or untoward side effects were noted with doses ranging from 100 to 600 mg. daily.

ADJUVANT THERAPY WITH ISOCARBOXAZID¹

STANLEY R. DEAN, M.D.²

Iproniazid³ has been markedly effective as adjuvant therapy in mild and moderate depressions (1-4), but its toxic and side effects (5-6) led to the search for a less toxic but equally or more effective analog. Isocarboxazid, a new agent reported to have up to 30 times the potency of the parent compound (7), seemed to meet these requirements (8). Several investigators reported improvement, with a minimum of side effects, in a large proportion of their patients. The reports were so encouraging that we initiated a trial study in the office treatment of 47 patients.

Our series, composed of 7 males and 40 females ranging in age between 17 and 74 years, was divided into 4 categories: reactive depressive, schizophrenic apathetic, manic-depressive (depressed), and obsessive-compulsive. These syndromes had been present for several weeks to several years.

Dosage of isocarboxazid was individualized, beginning with 10 to 40 mg. daily for 2 weeks to 3 months, and either maintained at the same level or reduced as patient response indicated. Treatment in 41 patients was continued for 1 to 8 months, while 6 were treated for less than 1 month.

Isocarboxazid did not replace any of the therapeutic measures being employed at the start of the study, but in all cases was added to the regimen, which included other chemotherapy for some patients, intensive psychotherapy and hypnobarbital (with hexobarbital sodium and methamphetamine HCl) for all, and ECT when considered necessary.

Patients were given routine medical examinations at the beginning of treatment and at specified intervals thereafter. Although

none had a history of liver or kidney disease, they were observed for clinical indications of liver involvement.

The degree of improvement was judged in the light of our many years of previous experience with similar cases. Taking into consideration the complete therapeutic picture, results with the test drug were judged as excellent, good, fair or poor.

Thirty (63.8%) of the 47 patients had a positive response to isocarboxazid. This is consistent with improvement (approximately 68%) in the general category of "psychiatric conditions" calculated as the average for some 3,000 patients in previous studies (9).

Since the drug was effective in 26 of the 27 reactive depressive and schizophrenic apathetic patients, it would appear to be a specific agent for these conditions. However, since there were only 4 schizophrenic apathetics, no definitive conclusions can be drawn for this group, and it should be noted that while their mood and cooperation improved, disturbed thought content was not affected.

In contrast, the drug was judged favorably in only 4 of the 20 manic-depressive and obsessive-compulsive patients. No better results have been obtained with tranquilizers, and further search for an effective chemotherapeutic agent for this type of patient is definitely needed.

There was a general tendency toward lowering of blood pressure, often beneficial, with a return to normal when dosage was reduced. Three patients discontinued medication because of "nervousness" and one was taken off the drug after 2 weeks because of orthostatic hypotension. One other developed hypotension which responded to interruption of treatment and a subsequent reduction in dosage; one became constipated; 2 developed edema which was rou-

¹ Marplan, trademark of Hoffmann-La Roche, Nutley, N. J.

² 122 Forest St., Stamford, Conn.

³ Marsilid®, Hoffmann-La Roche Inc., Nutley, N. J.

tinely managed with diuretics and reduction of dosage. One obsessive-compulsive who was also an alcoholic regressed, a development that very likely would have occurred under any circumstance.

Fifteen patients who had previously been underweight gained an average of 8 pounds. No dose-effect relationship was observed. In conjunction with hypnonarcosis, isocarboxazid caused moderate to severe headaches in most patients. This has not been reported in other studies with isocarboxazid and should not be considered a potential side effect when the drug is administered alone.

SUMMARY

In this series of 47 patients with a variety of depressive reactions, isocarboxazid produced a fair to excellent effect in 63.8% overall, and in 26 of the 27 reactive depressives and schizophrenic apathetics. Although it did not eliminate nor reduce the need for ECT, it was a valuable adjunct to ECT and intensive psychotherapy, particularly in reactive depressions. While not

found quite as effective as iproniazid, it was definitely better tolerated and less toxic, with no clinical evidence of hepatotoxicity in any of the patients.

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RAPID INTENSIVE TREATMENT OF IMPENDING RELAPSE

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We have observed that the usual methods of treating impending relapse are inadequate or unnecessary. Patients are formally readmitted and usually stay 3-6 months or longer. Many feel after a time that it is useless to leave the hospital for they always "come back anyway." Since we were studying 50 patients in a special research follow-up clinic, it was not difficult to discern the initial symptoms of a new psychotic episode. It was found also that some patients would spontaneously ask for "a rest" because they "weren't feeling too well."

THE PLAN

Patients showing a recrudescence of symptoms that led to their original hos-

pitalization were asked to stay in the ward for a 5 day period during which time they would receive intramuscular drugs daily and take part in the regular ward program. A remission of symptoms during this period made further in-hospital treatment unnecessary. If there were only a moderate improvement (still requiring further treatment), they would spend the week-end at home and return for a second period. At the end of this time, they were either formally readmitted (symptoms unabated), or else left the ward (remission).

This report concerns 15 patients, 11 of whom were between 20 and 40 years of age; 14 were schizophrenic (11—paranoid; 3—catatonic). Nine had 2-3 previous hospitalizations; three had 4 previous stays, and three had 5 or more admissions. Nine patients had been hospitalized one year or less prior to placement on convalescent care; one for 1-2 years, and five more than

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2 years. All were on convalescent care less than 9 months before threatened relapse required the intensive treatment described above.

METHOD

Thioperazine (7 cases), prochlorperazine and chlorpromazine (3 cases), fluphenazine (3 cases), chlorpromazine (1 case), and imipramine (1 case) were the drugs used. The intramuscular route was the choice of administration. Anti-Parkinson drugs were used where necessary. All patients took part in the ward and social therapy program.

RESULTS

Eight patients had one single treatment period, ranging from 1-6 days with a mean of 4.5 days. One spent 4 consecutive weekends in the ward, and 6 had two successive periods of treatment, each ranging from 3 to 8 days.

Eight patients voluntarily requested admission under this program ("I'm sick again"), and all left the hospital in remission. Seven were required to stay on the physician's or family's request. Only 3 in this group were able to leave; 4 had to be readmitted.

Discontinuation of medication was the presumed cause of the threatened relapse in 9 patients; all 4 readmissions were in this group. In 5 cases, added environmental stress and/or insufficient drugs were deemed the precipitating effect. In one case, no cause could be assigned.

There were no episodes of destructiveness or aggressiveness in spite of the fact that some patients were actively hallucinating. There were no untoward drug reactions.

The follow-up ranges from 4 weeks to 6 months, without any further change in status.

DISCUSSION

The importance of continued chemotherapy is again stressed in this study. One patient (with 4 hospitalizations) who experienced unusually severe extra-pyramidal symptoms on drug therapy said, "I'm coming back to the hospital. I'm sick again be-

cause I did not take the pills." Another with 4 readmissions, the last for 27 months, relapsed in 5 months and again in 7 months, having stopped her medicine each time.

Ten of the 15 patients showed signs of relapse between the fifth and seventh months. Therefore, special attention must be given to outpatients at this time. The shortest period of convalescent care before threatening symptoms appeared was 5 days and the longest 9 months. In the first case, the patient left the hospital at the same time the physician went on vacation, her medication was decreased and there were many marital problems. In the second case, 5 weeks after voluntarily having discontinued her maintenance medication, there was a full recurrence of the paranoid symptomatology. The patient was violently opposed to the idea of returning to the hospital, but relented when this was proposed finally as a solution. She left 4 days afterwards in a full remission.

Since this plan has been in operation, the patients feel that a return to the hospital will not last "forever," and very frequently spontaneously ask for treatment. Separation of the patient from the household breaks a reciprocal relationship where anxiety and tension mount on both sides. The family soon demands hospitalization, and then very often the patient actually develops acute symptoms. Our method attempts to avoid this process.

The observations suggest that signs of incipient relapse can be treated in the intensive manner described, obviating prolonged hospitalization with their attendant "hospital-induced" symptoms.

The 11 patients returning to the community stayed in the hospital for a total of 71 days. Assuming that the relapse would have required rehospitalization with an average stay of 135 days, then under ordinary circumstances this group would have been hospitalized for 1,485 days.

CONCLUSION

Rapid intensive in-hospital chemotherapy of incipient relapse can prevent a psychotic breakdown in the majority of cases.

A COMPARATIVE TRIAL OF ECT AND TOFRANIL

E. M. BRUCE, M.B., N. CRONE, M.B., G. FITZPATRICK, M.D., S. J. FREWIN, M.B.,
A. GILLIS, M.B., C. F. LASCELLES, M.B., L. J. LEVENE, M.B., AND
H. MERSKEY, B.M.¹

We have attempted to estimate as far as possible the relative value of Tofranil and convulsive therapy in depression. Fifty consecutive admissions suffering from depression and judged to be sufficiently ill to require ECT were given either ECT or Tofranil by random allocation. Forty-nine of these patients had endogenous depression. Those given Tofranil received doses rising to 75 mgms. t.d.s. followed by maintenance doses of 50 mgms. b.d. or t.d.s., or less if they were responding well. Those given ECT had an average of 6.1 treatments in the first month. Barbiturate sedation was used as required in both groups. Assessments were made at one month and three months.²

RESULTS

One patient refused ECT. Of the remaining 49, 42 completed a month's treatment in their original group. In 7, the response to Tofranil was too slow in the opinion of the responsible clinician to justify withholding ECT and these patients as well as one who had an anaphylactic reaction to the drug after 23 days, were given ECT.

Of the 22 patients treated only with ECT, 21 were very much better after one month and 18 of the 19 patients treated with Tofranil were also greatly improved or recovered after one month. These results show a good response to either treatment although perhaps the degree of improvement appears to have been rather better in the ECT group. If the 8 patients whose initial treatment was interrupted are also placed

in the original groups from which they were withdrawn and classed as failures of their original treatment the trend favours ECT, the differences being statistically significant ($\chi^2=4.348$, $P<0.05$). However, only 3 of the 7 who were given ECT after Tofranil got better quickly, from which it may appear that if a patient does not respond to Tofranil he is more likely to belong to the small group which is resistant also to ECT.

Another way of treating these findings would be to say that each patient who had both Tofranil and ECT during the first month should be classed as a success or failure for each of the treatments. In that case a nominal 24 patients responded to ECT and 16 to Tofranil, 6 patients failing to respond to ECT and 11 failing to respond to Tofranil. For this arrangement of the results which is perhaps the most objective the differences between ECT and Tofranil are not statistically significant. Further the time taken for treatment in hospital with ECT or Tofranil was virtually identical.

Age distribution and the response to treatment showed an equivalent degree of success from either treatment at any age.

In both the pure Tofranil and pure ECT groups all but 3 of those who had improved after one month were well at three months. Of the 8 who had had Tofranil and ECT during the first month, however, only 4 were well after three months. Of the remainder, one other had committed suicide after leaving hospital against advice.

CONCLUSIONS

The proportion of patients who improved during the first month of treatment was higher in the group given ECT but over 60% of those given Tofranil showed a good response in that time, perhaps justifying the view that Tofranil may often serve as a substitute for ECT.

¹ Cherry Knowle Hospital, Sunderland Co., Durham, England.

² This work has been assisted by a grant for secretarial expenses from the Scientific and Research Committee of the Newcastle Regional Hospital Board and by a supply of Tofranil tablets from Messrs. Geigy Ltd.

We also wish to thank Mr. G. Coulthard, Group Pharmacist and other members of the hospital staff for their willing assistance.

UNRELATEDNESS OF MECHOLYL CHLORIDE AUTONOMIC REACTION INDICES

DAVID PEARL, Ph.D., and HARRY VANDERKAMP, M.D.¹

In the past few years, disenchantment has set in with the use of mecholyl chloride as a prognosticator for clinical improvement in mental illness. Recent reports have questioned the value and reliability of the "Funkenstein Test" which utilizes systolic blood pressure variations (2). The basic accuracy of systolic blood pressure changes has been questioned since such changes are influenced by many extraneous variables (2, 3). Funkenstein's categorization of subjects into 6 groups based on the shape and area of graphed blood pressure changes has also been found unsatisfactory. Thus, some have resorted to grosser groupings, e.g., hypo, normal and hyperautonomic nervous system reactivity as defined by the area enclosed by systolic changes over the observation period (1).

Elsewhere (6) we have stressed the greater reliability and prognostic usefulness of pulse rate indices. In a further study, the mecholyl test was given to 100 newly admitted psychiatric patients. Basal blood pressure and pulse rate readings were taken and changes over a 15 minute period were obtained instead of the more customary 24 minute span. It had been determined that pulse rate area for the shorter span correlated .94 with the longer period. Three subjects were prematurely terminated with atropine due to the severity of their reaction. Eighty-two of the remaining subjects were schizophrenic patients. Data was graphed and the correlation of pulse rate and systolic blood pressure areas was found to be -.10, not significantly different from a chance or zero relationship. The criterion of pulse rate deviation at 7 minutes, previously found to be the best single prognostic indicator (6) also correlated -.10 with systolic area. The two pulse rate measures were highly related, correlating .86.

The lack of relationship of pulse rate and systolic blood pressure variables was corroborated on a second independent sample of 50 cases. On this, systolic blood pressure area correlated with -.03 with pulse rate area and -.02 with pulse rate deviation. Pulse rate deviation correlated .84 with pulse rate area.

Obviously then, pulse and systolic blood pressure variables following a mecholyl chloride injection do not tap the same process. It is suggested that pulse rate variables may be more useful for predictive purposes and may tap more significant parameters than does the systolic blood pressure measurement. An illustration is provided in a recent study of perception utilizing tachistoscopic presentation of a perceptual span test to 53 subjects also given the mecholyl test (4). Pulse rate area and Perceptual Span score correlated .42, significant at the $P_{.01}$ level of confidence, whereas Systolic Blood Pressure Area had a chance correlation of -.19 with Perceptual Span. Thus a pulse criterion of autonomic reactivity was related significantly to an important aspect of human functioning, whereas the more usually utilized systolic blood pressure variable failed to show any relationship.

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CASE REPORTS

GILLES DE LA TOURETTE'S DISEASE

JEROME M. SCHNECK, M.D.¹

Gilles de la Tourette reported on *maladie des tics* in 1885. It consists of many involuntary movements and coprolalia. Echolalia and echokinesis may be present. Patients have been described recently by Ascher (1), who reviewed the literature, and by Eisenberg, Ascher, and Kanner (2). Cases are reported infrequently.

An 18-year-old girl exhibited involuntary, explosive movements of head, neck, body, and limbs. She tossed her head backwards or to the side. Arms jerked away from or against her body. She emitted uncontrolled shrieking sounds, barking and sneezing noises. "Shit" and "fuck" were exclaimed repeatedly, without control.

She was affable in early childhood. At age 5 she had episodes of knee-bending. At 8, after her sister was born, she had temper tantrums that improved during brief psychotherapy. At 9 present mannerisms started. Her schooling was obtained at home under special arrangements.

In her speech, the patient now introduced comments with an explosive "yeah!", clicked her tongue, and ground her teeth. Her body would flex or extend with jolting thrusts. In the past, the right or left leg would bend suddenly at the knee and result, at times, in falling. Movements disappeared during sleep.

The patient had several medical contacts for psychotherapy and pharmacotherapy. In reports received, Gilles de la Tourette's disease was apparently not specifically diagnosed and perhaps not recognized. She believed symptoms increased during one period of psychotherapy. Barbiturates, benzedrine, thorazine, and other medications were of no avail. Thorazine may have made her worse. General physical and neurological examinations were negative. Electroencephalograms were normal. Bilateral chemothalamectomy had once been recommended.

In psychotherapy over several months the patient was friendly and loquacious, but superficial and evasive. Conflict areas were avoided by her. She was repressed and sexually im-

mature. She argued much at home with her sister and mother, yet denied significant feelings of hostility. She requested hypnotherapy. With stress on hypnotic relaxation, movements decreased or disappeared. When verbalization was encouraged, voluntary and involuntary movements returned. Posthypnotic suggestions apparently resulted in fewer movements between sessions but there was no remarkable change. Feelings of anxiety appeared to increase as movements diminished. Her mother was seen in consultation and the patient asked to be present. She showed no reaction to her mother's sharp, almost sadistic criticisms. Later she denied having been disturbed by them. Yet the diminution in movements obtained previously soon disappeared. The patient, having intended originally to continue longer in treatment, now expressed a desire to terminate. She wanted treatment most when her mother had hesitated. She stopped when her mother seemed to encourage it.

The multiple movements and vocal utterances seemed to be an outlet for intense aggressive feelings that were impossible for her to manage. Also, through denial, she tried to hold in check her explosive hostility. It was directed primarily at members of her family, especially her mother. It was suspected that were the symptoms to have been removed suddenly in this patient by any means, her illness might have assumed psychotic proportions.

The etiology of Gilles de la Tourette's disease is unknown. Its manifestations have been linked to hysteria, obsessive-compulsive reactions, schizophrenia, and other mental states. This patient's personality functioning suggested hysterical patterns primarily. Structural brain pathology is often mentioned but it has not been substantiated in *maladie des tics*. The prognosis is usually considered grave. Some optimism is expressed occasionally in connection with psychotherapy.

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HISTORICAL NOTES

PIETRO PISANI (1760–1837) : A PRECURSOR OF MODERN MENTAL HOSPITAL TREATMENT

GEORGE MORA¹

Exactly two centuries ago, in 1760, Baron Pietro Pisani² was born in Palermo, then the capital of the kingdom of Sicily, of a rather wealthy family. After studying jurisprudence, he became interested in music and archeology. From his marriage in 1784 several children were born. Following the death of a son, a precocious musician, in 1815, he apparently underwent a long period of depression. At the end of it, when 64 years old he decided to dedicate the rest of his life to humanitarian work and therefore accepted the superintendency of the hospital for mental patients in 1824.

This hospital, originally built for lepers in the 12th century, had finally been assigned to mental patients in the 18th century. From the description left by Pisani himself, it is clear that the patients were kept in a condition of complete abandonment and that they were mistreated by the guardians. During the first three years of his superintendency, Pisani built a new hospital named Real Casa de' Matti outside of Palermo. The building was divided in two floors, for private and ward patients. Male and female patients lived in separate quarters. Among the facilities of the building were running water and many baths for about 200 patients.

In the meantime, Pisani elaborated his philosophy of treatment in the *Istruzioni (Regulations)*, published in 1827.³ Moral treatment, together with all medical technical devices, were applied in the hospital by the superintendent and his staff. This

consisted of full-time physicians and male and female attendants. Rounds were held frequently and progress and treatment notes were kept up to date. Conferences among the superintendent and the medical staff were held weekly and at the end of each patient's hospitalization. The brains of the patients who had died in the hospital were conserved in the pathological museum.

Each patient had to be committed to the hospital by state authorities and a strictly confidential personal history was taken from the relatives. After an initial bath and a visit to the hospital, the patient, accompanied by the physician, the nurse and the attendant, was given particular attention, while being carefully studied. It was Pisani's idea that "*in spite of their mental disorders, patients respond to a frank and sincere approach and are able to experience feelings of confidence, benevolence, friendship and pride.*" Particular emphasis was put on affectionate and lovable manners, which—according to Pisani—could remove the mind of the patient from his fixed ideas and turn it to good and moral principles.

Regular work, especially outside in farms or in gardens (because of the "natural inclination of man towards earth") was encouraged for all the patients, to make them relax and sleep better. They were also employed for the internal service of the hospital, and were paid a small amount of money. The therapeutic program included dances, physical exercises, songs and dramatic presentations⁴ for both male and female patients. The patients were continuously encouraged to socialize and were given progressive responsibilities, in ac-

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² A more complete and detailed study on Pisani has been recently published by the author: Pietro Pisani and the mental hospital of Palermo in the early 19th century, *Bull. Hist. Med.*, 33 : 230, 1959.

³ The exact title of this booklet is: *Istruzioni per la novella Real Casa de' Matti in Palermo*, Palermo, 1827.

⁴ For the dramatic presentations in mental hospitals in the past century, see: G. Mora, Dramatic presentations by mental patients in the middle of the 19th century and A. Dumas' description, *Bull. Hist. Med.*, 31 : 260, 1957.

cordance with their degree of improvement. This included moving around the hospital, going into town by themselves or with others, to the theatre or to shop. As Pisani believed that the cause of the patient's trouble lay in the family environment, he did not allow visits to the patients, until they appeared greatly improved. At that point, patients were sent home for a trial period of three months, and eventually indefinitely. The only systems of restriction for agitated patients were temporary isolation and tepid baths. In cases of extreme agitation, the patient was securely tied to a hammock in a specially padded room and then rocked like a child until he fell asleep. Although detailed statistics on the results of his treatment are not available today, it seems that about 160 (namely 2/5) of 400 patients treated in Palermo in 10 years were discharged as cured. This proportion of cures was superior to that obtained at Bicêtre et Salpêtrière in Paris.

In evaluating Pisani's work in its significance, it is impossible to determine today how much of it was original, and how much was influenced by contemporary views, such as those introduced by Chiarugi in Florence, by Pinel in Paris and by W. Tuke in York, England. Although Sicily was at that time in a period of general, cultural and intellectual decadence, in very poor economic condition and run by a societal hierarchy of feudal type, Pisani had travelled extensively through Europe in his youth. Furthermore, Sicily—following its "discovery" by Goethe in 1787—had been visited by a number of travellers, such as painters, writers, archeologists, or simply tourists in search of adventures, who had all introduced ideas into the island.

Whatever the question of his originality may be, the fact remains that Pisani's institution soon became the point of attraction of many visitors, who left interesting descriptions of it.⁵ In spite of the differences of background, interests and accuracy of these visitors (among whom were Lord Buckingham and Alexander Dumas the elder⁶), the

judgment on the organization, the functioning and the methods of treatment was unanimously full of admiration and of appreciation for Pisani's work. It was even suggested that different governments of Europe should use Palermo's institution as a training place to improve the condition of their mental hospitals.

More interesting for us are, however, the reports of some physicians who carefully visited the institution and left accurate descriptions of it, such as the German Edward W. Güntz in 1829⁷ and, later on, W. Mandt and Carl Rust in 1832.⁸ Because of these reports and of the novelty of Pisani's work, his name started to become known and honored in other countries. He was made a member of the Academy of Medicine of Leipzig, of the Royal Academy of London, and, in 1836, of the Boston Phrenological Society.⁹ In spite of his advanced age, Pisani continued to work until his death in 1837, during which year he succumbed to a violent epidemic of cholera while taking care of his beloved patients.

Pisani's work continued to remain alive among his contemporaries and motivated some to publish biographies of him.¹⁰ In the meantime in 1853, a psychiatric journal called *Il Pisani*, was founded, and, except for an interruption of a few years, has reappeared regularly since 1880. In the year before his death, Edward W. Güntz pub-

⁵ A. Dumas' description of the mental hospital of Palermo is in: *Impressions de voyage. Le capitain Aréna*, Paris, Calmann-Lévy, 1881, pp. 1-24. See also: *La vie d'Alexandre Dumas, raconté par A. Dumas. Textes recueillis par A. Guérin*, Paris, Juillard, 1953, pp. 213-221.

⁷ For Güntz's report, see: Güntz, E. W.: Don Pietro Baron Pisani, der Vorläufer John Conollys, Leipzig: Reklam, 1878.

⁸ For Mandt and Rust's report, see: Hoffmann, H.: Ein Beitrag zur Geschichte der Psychiatrie, *Allg. Zschr. f. Psychiat.*, 103: 76-127, 1935. Both reports contain the translation of Pisani's *Institutions*.

⁹ The document stating Pisani's nomination to honorary member of the Boston Phrenological Society was signed by Samuel G. Howe, Secretary, on April 2, 1836.

¹⁰ The most important of these biographies are the following three: A. Linares, *Biografie e ritratti d'illustri siciliani morti nel cholera l'anno 1837*, Palermo, Alleva, 1838; B. Serio, *Biografia del Barone Pisani*, Palermo, Roberti, 1839; B. Salemi-Pace, *Cenni biografici sul Barone Pietro Pisani*, Palermo, Virzi, 1878.

⁵ A special guide, written by a former patient, was printed for the visitors: *Guida pe' forestieri che si fanno a visitare la Real Casa de' Matti in Palermo*, Palermo, Muratori, 1835.

lished his important monograph on Pisani, containing also the translation of the *Regulations*. Mandt and Rust's report remained unedited for more than a century, until it was published by H. Hoffmann in abridged form. Aside from these publications, Pisani's work remained virtually unnoticed by medical historians and psychiatrists.

Only recently, after the acceptance of dynamic psychiatry, has Pisani's reform come to acquire new light and significance. Both the influence of his impressive and venerable figure and the particular suggestibility of the Sicilian population (so inclined to the acceptance of magic and of supernatural), must have created a condition especially favorable to a psychotherapeutic atmosphere. Such an atmosphere is definitely comparable to that created by other pioneers of psychiatric reforms, such as Chiarugi, Pinel and William Tuke, in spite

of the less progressive cultural and social environment of Sicily.

Pisani's principles of treatment, after a long oblivion while pathology was uppermost in psychiatry, become understandable today in the light of such recent psychiatric developments as "milieu therapy" and "therapeutic environment." Even detailed techniques, such as that of rocking the agitated patient in a hammock until he fell asleep, acquire today a new significance, in terms of the concepts of regression and of libidinous gratification.

In spite of the fact that Pisani's reforms, unlike those of Pinel and W. Tuke, were not continued after his death, his name should be remembered—especially on the occasion of the bi-centenary of his birth—among the pioneers of modern mental hospital treatment.

COMMENTS

ATLANTIC CITY MEETING HIGHLIGHTS

The 116th Annual Meeting of the American Psychiatric Association was held in Atlantic City, New Jersey, May 9-13, 1960, with headquarters at the Traymore Hotel. Business meetings and scientific sessions were held in Convention Hall. The total registration was 5,077 making this one of the largest Annual Meetings although smaller than the 1959 Annual Meeting by 27 persons. The registration included 2,434 members, 1,334 guests, 393 exhibitors, 874 wives of members, and 42 press representatives. Foreign guests included psychiatrists from Africa, Australia, England, Haiti, Italy, Japan, Poland, Portugal, Switzerland, and Turkey. The Program included 152 scientific papers and 19 Round Tables.

The official opening session was called to order by the President, Dr. William Malamud, at 9:30 a.m. on May 9. Father Doyle gave the Invocation, and a welcoming address was presented by the Honorable Robert B. Meyner, Governor of New Jersey. Following the introduction of Dr. Robert H. Felix, President-Elect, by the President, reports were presented by Dr. Mathew Ross, Medical Director; Dr. Alfred Auerback, Speaker of the Assembly; Dr. Robert S. Garber, Chairman of the Arrangements Committee; and Dr. John Donnelly, Chairman of the Program Committee. The Secretary, Dr. C. H. Hardin Branch, announced the official membership count as of March 31, 1960 as 11,037. Later at this session, 490 new Associate Members and 250 new Members were approved by the membership in addition to those members who were advanced in status. Upon recommendation by the Council, three new District Branches were approved by the membership bringing the number in the Assembly to 52: Mid-Hudson (N. Y.), Nebraska-North Dakota-South Dakota, and Ontario. Dr. Addison M. Duval, Treasurer, reported that the Association had just completed a reasonably successful year financially and that the overall financial condition had improved. Judge David L. Bazelon of the U. S. Court of Appeals in Washington, D. C. was given the

Isaac Ray Award and Dr. Albert J. Stunkard, Associate Professor of Psychiatry at the University of Pennsylvania, received the Hofheimer Prize. The winner of the 1959 Mental Hospital Achievement Award was the Somerset (Pa.) State Hospital, with Honorable Mention awards to the Philadelphia (Pa.) State Hospital and the Eastern (Okla.) State Hospital. The Presidential Address was delivered by Dr. Malamud with the response by Dr. Felix. The Opening Exercises were closed with a Benediction by Rabbi Weilerstein.

The second Business Session was called to order by the President on Tuesday afternoon, May 10, at 2:00 p.m. Dr. Evelyn Ivey, Chairman of the Board of Tellers, announced the results of the election of Officers for 1960-61 as follows: Dr. Walter E. Barton, President-Elect; Dr. D. Griffith McKerracher, Vice President; Dr. Raymond W. Waggoner, Vice President; Dr. C. H. Hardin Branch, Secretary; Dr. Addison M. Duval, Treasurer; incoming Councillors, Dr. Daniel Blain; Dr. David A. Boyd, Jr.; Dr. M. Ralph Kaufman. Proposal No. 1 to amend Article III, Section 3 of the Constitution was approved, Proposal No. 2 to amend Article V of the By-Laws was approved, and Proposal No. 3, offered as a substitute for a portion of Proposal No. 2, was defeated. Reports were presented by the three Coordinating Committee Chairmen: Dr. Harvey J. Tompkins, Committees on Technical Aspects of Psychiatry; Dr. Wilfred Bloomberg, Committees on Professional Standards; and Dr. Paul Lemkau, Committees on Community Aspects of Psychiatry. After a brief recess, the Convocation for the newly elected Fellows began with the Processional March at 3:00 p.m. A total of 162 new Fellows attended the ceremony. Highlight of the Convocation was the Fellowship Lecture presented by Leo W. Simmons, Ph.D., of Columbia University on "A Sociologist's Views on Patient Care and Treatment." The ceremony was concluded with a Recessional March.

The next Business Session was held on

Wednesday morning, May 11, and was called to order by the President at 9:15 a.m. The Secretary presented his report to the membership reviewing the actions of the Council since the last Annual Meeting. These were approved on motion from the floor. With a separate motion, the membership also approved Chicago as the site for the 1961 Annual Meeting.

The Annual Dinner was held on Wednesday evening at 7:30 in the American Room of the Traymore Hotel and was followed by a floor show and dance. Highlight of the evening was the presentation of a handsome scroll to Dr. Mesrop A. Tarumianz for his leadership in establishing the Central Inspection Board in 1948 and for his service as its Chairman since. The presentation was made by Dr. Felix and was acknowledged by the audience with prolonged applause.

The final Business Session was held on Friday, May 13, at 11:30 a.m. After he called the meeting to order, Dr. Malamud presented the gavel to Dr. Felix signifying his installation as President. The Secretary reported the actions taken by the Council at its meeting on May 12, and these were approved by the membership upon motion from the floor. Dr. Malamud presented Certificates to those who were retiring from office and indicated his appreciation to the membership and the staff for their assistance and cooperation during his tenure as President.

Other items of special interest included the meeting of the Assembly on May 9-10 for the seventh consecutive year with 49 District Branches represented. Their officers for 1960-61 are Dr. John R. Saunders, Speaker; Dr. Edward Billings, Speaker-Elect; Dr. Lester Shapiro, Recorder; Dr. Alfred Auerback, Past-Speaker; and Dr. Walter H. Obenauf, Parliamentarian. Area Members of the Policy Committee are Dr. Robert S. Garber, Northeast; Dr. William L. Holt, New York; Dr. Hamilton Ford, Southern; Dr. G. Wilse Robinson, Jr., Midwest; and Dr. G. Creswell Burns, Western.

The Adolf Meyer Lecture was presented by Sir Aubrey Lewis, M.D., F.R.C.P., of London, England at 10:00 a.m. Thursday, May 12. His subject was "The Study of Defect." The Modern Founders, who played a major part in the success of the Building Fund Drive several years ago and have continued their interest in the development of the physical assets of the Association, held their second annual luncheon on May 11 with forty members and guests in attendance. Three new Modern Founders were welcomed into the group, and each member was presented a certificate of appreciation and a rosette. The experimental Teaching Session on "Recent Advances in Biological and Cytological Genetics in Relation to Psychiatry" was well attended and well received. Admission was limited to APA members with reservations which were available without charge, and 195 members took advantage of the opportunity. A novel feature of the Annual Meeting was the "Videclinic" on Wednesday and Thursday, May 11-12, at 2:00 p.m. which utilized a large television screen and a closed circuit hook-up with Chicago and Ann Arbor to telecast the experiments of several doctors. The 116th Annual Meeting was officially closed at 5:00 p.m. on May 13.

The meeting was eminently successful both scientifically and socially and will stand as one of the finest in the history of the Association. This success was largely due to the great leadership and wise guidance of Dr. William Malamud, the retiring President, and the harmonious cooperation of the entire membership, Officers, and Committees. Special recognition and thanks should go to those who have helped in making this success possible, more particularly to Mr. Austin M. Davies, the Executive Assistant; Dr. Mathew Ross, Medical Director; and Messrs. Robinson and Turgeon of the Central Office; and members of the staff of both offices as well as the Committees on Arrangements and Program.

C. H. Hardin Branch, M.D.,
Secretary

EDITORIAL BOARD CHANGES

Dr. Walter L. Treadway, who has been an active and valued member of the Edi-

torial Board of this Journal since 1936, recently submitted his resignation, which al-

though with regret, was accepted. At the annual meeting of the Board during the 1958 convention of the APA in San Francisco Dr. Treadway was with us and we had the benefit of his discussion of the matters on the agenda of that meeting.

On behalf of the Editorial Board, I would like to express our appreciation of Dr. Treadway's services and of our long and happy associations with him.

To maintain the traditional number of members the Council has appointed Dr. Kenneth G. Gray a member of the Editorial

Board as of July 1, 1960. Dr. Gray is a qualified lawyer, with the added distinction of being a Queen's Counsel. He is also associate professor of psychiatry in the University of Toronto, and is presently serving as chairman of the Committee on Law and Psychiatry in the American Psychiatric Association. It is pleasant to record that the members of the Editorial Board were unanimous in recommending the nomination of Dr. Gray to the Council at the meeting of that body at Atlantic City in May of this year.

SOCIETY AND ART

There is no lack of folly in the Arts; they are full of inertia and affectation and of what must seem ugliness to a cultivated taste; yet there is no need of bringing the catapult of criticism against it: indifference is enough. A society will breed the art which it is capable of, and which it deserves. . . .

—SANTAYANA

SCIENTIFIC OBSERVATION

Put off your imagination as you take off your overcoat when you enter the laboratory; but put it on again, as you do the overcoat, when you leave the laboratory. Before the experiment and between whiles let your imagination wrap you around; put it right away from yourself during the experiment itself, lest it hinder your observing power.

—CLAUDE BERNARD

CORRESPONDENCE

DYNAMIC ORIENTATION

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY:

SIR: A number of the advertisements of positions vacant for psychiatrists in the APA Mail Pouch require applicants to be "dynamically oriented." It would be wishful thinking to imagine that this meant that specially powerful or energetic applicants were wanted (*dynamis*—power, energy). What is meant apparently is that applicants should be committed to a particular theory of psychiatry.

This phenomenon, which unhappily is symptomatic of the general situation of psychiatry today, can make our profession seem ridiculous to other physicians and to scientists in general. It is a historical fact that no one theory has ever satisfactorily described

the whole material of a scientific discipline, and there is reason to believe that "psychodynamic" theory is no exception to this rule. We would surely be amused, or horrified, if biology teachers were required to be "evolutionists," or if psychologists had to be "behaviouristically oriented." Let us look at our own behaviour in the same light.

It has also occurred to me, by way of free association, that requiring applicants to subscribe to a particular theory may be an unfair employment practice, and as such could be challenged in the courts.

Mark A. Stewart, M.A., M.R.C.S.,
Washington University,
School of Medicine,
St. Louis, Mo.

MARRIAGE ANNULMENT

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY:

SIR: On September 25, 1959, the Supreme Court of New York handed down a decision which was radically new and which is of great interest to psychiatrists.

In the case *Schaefer vs. Schaefer*, 192 N. Y. S. 2d 275, a marriage was annulled on ground of fraud. The fraud consisted in concealment of the defendant's (wife's) prior hospitalisation in a State Hospital as catatonic schizophrenic. There had been several such prior admissions, and at the time of institution of suit the wife again was admitted under this diagnosis to a hospital. There were three children to this marriage and custody was given to the plaintiff-husband. The husband had not lived with defendant as man and wife since he became aware of the facts he claimed constitute fraud.

In the past, all courts have in such cases maintained, that no fraud exists and annulment would not be granted. The courts argued, that a mental patient—whether sick, recovered or in remission—could not have committed a fraud, because fraud means intentional withholding of pertinent infor-

mation which would have prevented the plaintiff from marrying defendant had he known the true facts which were fraudulently withheld by defendant: but a mental patient is not aware of the seriousness of his disease and that it would be a valid reason for plaintiff not to enter marriage; even if recovered, the courts held, insight into the seriousness of the disease and the possibility of relapse is usually not present. Therefore fraud can not exist. The patient will usually consider his past hospitalisation as no more important than a hospitalisation for measles: once it is over it is of no further importance. This may not be true, but the defendant is not aware of it.

This principle has been completely reversed in the above cited case, and it remains to be seen, whether the Supreme courts of other states will also reverse their own previous decisions or the generally held view represented by a consensus of opinion of all experts in forensic psychiatry. The possibility that such suits may now be instituted with at least some chance of success should be known to all psychiatrists.

Hans S. Unger, M.D.,
Buffalo, N. Y.

NEWS AND NOTES

OCCUPATIONAL PSYCHIATRY NEWSLETTER.

—The Committee on Occupational Psychiatry, at its semi-annual meeting in Detroit in October, 1959, voted to establish a *Newsletter* to improve communication among those interested in and concerned with the health of people at work.

The *Newsletter*, the first issue of which bears date March, 1960, an 8-page folder, is designed to be international in scope. It will be published semiannually, or quarterly as may appear advisable. Single copies available from Mental Health Materials Center, 104 E. 25, N. Y. 10, N. Y., at \$.50.

Editor of the *Newsletter* is Alan H. McLean, M.D., I.B.M. Corp., 590 Madison Ave., N. Y. 22, N. Y.

NARCOTIC RESEARCH AT MANHATTAN STATE HOSPITAL.—A grant of \$300,000 has been made by the National Institutes of Health to the N. Y. State Department of Mental Hygiene, matched by a similar appropriation by the State, for construction of a narcotics research facility at Manhattan State Hospital.

The facility will include 20 laboratories, animal rooms, library, conference and office rooms. A 55-bed narcotic division, already established, provides both inpatient and outpatient services.

NORTH PACIFIC SOCIETY OF NEUROLOGY AND PSYCHIATRY.—The annual meeting of the Society was held in the Benjamin Franklin Hotel, Seattle, on April 8 and 9, 1960. The following officers were elected: President, Peter O. Lehmann, M.D., Vancouver, British Columbia; President-elect, Robert S. Dow, M.D., Portland, Oregon; Secretary-Treasurer, Thomas H. Holmes, M.D., Seattle, Washington; Executive Committee, Edward D. Kloos, M. D., Portland, Oregon; Wallace Lindahl, M.D., Seattle, Washington; R. L. Whitman, M.D., Vancouver, British Columbia.

HUMBOLDT UNIVERSITY, BERLIN, MEDICAL FACULTY.—The celebration of the 250th anniversary of the Charité will be held in Berlin from November 6 to November 19,

1960, in connection with the 150th anniversary of the Humboldt University. Applications for participation are to be directed to the Committee for the Preparation of the 250th anniversary of the Charité, Berlin N 4, Schumannstrasse 20-21, c/o Dozent Dr. med. habil. Dagobert Müller, secretary of the committee.

GRANT-IN-AID PROGRAM FOR ALCOHOLISM RESEARCH.

—Licensed Beverage Industries, Inc., has made \$500,000 available for a 5-year program to investigate the extent of alcoholism, its cause and treatment. Grants will be awarded to qualified researchers in the biological and behavioral sciences. It is expected that grants will range between \$2,000 and \$10,000 running for one year. Renewal of the grant may be considered. The program is administered by a Scientific Advisory Committee whose members represent a wide range of relevant disciplines. For detailed information and application forms write to the Scientific Advisory Committee of the Licensed Beverage Industries, Inc., 155 East 44th St., New York 17, N. Y.

AMERICAN ACADEMY OF PSYCHOTHERAPISTS.

—The Western Regional Chapter of the American Academy of Psychotherapists, an interdisciplinary organization, held its first annual meeting on April 23, 1960 in San Jose, California. The professional part of the meeting consisted of a Symposium on "Peak Experiences in Psychotherapy" led by George R. Bach, Ph.D. and Nathan Cooper, M.A. Recently elected officers of the Chapter include Arthur H. Davidson, Ph.D., Chairman, Arthur Burton, Ph.D., Chairman-Elect and Verda Heisler, Ph.D., Secretary-Treasurer. For further information concerning the Chapter, write to Verda Heisler, Ph.D., 2306 Sixth Avenue, San Diego 1, California.

EAST BAY PSYCHIATRIC ASSOCIATION.

—The officers of this society for the year 1960 are as follows: Dr. Dora Fishback, President, Berkeley, Calif.; Dr. Allen S. Mariner, President-elect, San Leandro, Calif.; Dr. Richard E. Turk, Secretary, Berkeley,

Calif.; Dr. Robert K. Adamson, Treasurer, Berkeley, Calif.

Elected Councillor is: Dr. Anita U. Brothers, Berkeley, Calif.

THE NATIONAL HEALTH COUNCIL.—Granville W. Larimore, M. D., Deputy Commissioner of the New York State Department of Health, has been appointed Chairman of the 1961 National Health Forum, which represents more than 70 member agencies.

The 1961 Forum will be held at the Waldorf Astoria Hotel in New York City, March 13-16, 1961. The general subject for consideration: "Health and Communication." For information address The National Health Council, 1790 Broadway, New York 19, N. Y.

TEMPLE UNIVERSITY RESEARCH ON INSANITY AND THE LAW.—A grant of \$192,165 from the National Institute of Mental Health has been allotted to the Temple University Unit in Law and Psychiatry, and goes specifically to Dr. Samuel Polsky, associate professor of law, and Dr. Melvin S. Heller, assistant professor of psychiatry, co-directors of the Unit, for a three-year research program and study in "Insanity Procedures under Federal Law."

Under the terms of the grant, Drs. Heller and Polsky will make a joint legal and psychiatric study of the actual factors in the determination of competency to stand trial and criminal responsibility under Federal law.

ILLINOIS PSYCHIATRIC SOCIETY.—On April 20, 1960, the following members of the Illinois Psychiatric Society were elected for the year 1960-61, all of Chicago: President, Dr. Joel S. Handler; President-Elect, Dr. Melvin Shabshin; Secretary-Treasurer, Dr. Harold M. Visotsky; Councilors: Dr. Frances Hannett, Dr. Jackson A. Smith. Delegate to APA Assembly, Dr. Paul E. Nielson; Alternate Delegate, Dr. Jewett Goldsmith.

MUSIC REHABILITATION CENTER, NEW YORK CITY.—This rehabilitation service, established one year ago by the Musician's Emergency Fund in Carnegie Hall, has now moved to larger quarters at 50 W. 57th St.

This was to accommodate the increasing number of persons referred by clinics and by private psychiatrists.

The Center gives instrumental and vocal instruction as therapy to adult outpatients in liaison with the referring physician.

For information address Miss Florence Tyson, Director, Music Rehabilitation Center, 745 Fifth Avenue, New York City. PLaza 1-0530.

WORLD CONGRESS OF PSYCHIATRY III.—The Planning Committee for the Third World Congress of Psychiatry have informed us that plans are proceeding satisfactorily. Program and other arrangements have now progressed to the point where it is expected that the second announcement will be in the hands of all psychiatrists by September next. This announcement will contain full details regarding registration, accommodation, presentation of papers, and other related matters.

Meanwhile, those who are interested in presenting papers at this important meeting should notify the General Secretary of the Congress prior to September 1, 1960. Abstracts in triplicate, in not more than 250 words, in one of the official languages of the Congress should reach the Congress office at the Allan Memorial Institute, 1025 Pine Avenue West, Montreal 2, Quebec, Canada, not later than December 1. Dr. C. A. Roberts is General Secretary of the Congress.

PSYCHIATRY AND THE GENERAL PRACTITIONER.—The Western Interstate Commission and the Western Council on Mental Health Training and Research, through a 3-year grant from the National Institute of Mental Health, has begun an annual series of four 10 week courses in the psychiatric aspects of medical practice for general practitioners and other physicians in communities remote from medical teaching centers. This program is designed to augment the psychiatric knowledge and skills of physicians in community practice.

Courses have been held in Billings, Montana; Laramie, Wyoming; Phoenix, Arizona; and Lebanon, Oregon. Eventually courses will be given in all of the 13 Western states.

Klaus Berblinger, M.D., chief of clinical services at the Langley-Porter Neuropsychiatric Institute, San Francisco, is director of training and Warren T. Vaughan, M.D., director, WICHE Mental Health Project, is liaison officer and coordinator.

DR. L. E. PENNINGTON.—The death of Dr. Pennington, a Life Fellow of the APA and a veteran of World War I, occurred May 17, 1960 at his home in Jackson, Miss. at the age of 70.

Dr. Pennington was a graduate of the College of Pharmacy and Medicine of Emory University, Atlanta, Ga. He had served as superintendent of several mental hospitals and was also the founder of the Pennington Sanitarium in South Bend, Indiana. He had been the clinical director of Terrell State Hospital, Terrell, Tex. Later he joined the staff of the Mississippi State Hospital. He was past president of the Baldwin Medical Society; and was clinical instructor in psychiatry at the Mississippi Medical Center, attending physician at the University Hospital and a member of staff of the Veterans Administration Hospital at the time of his death.

TEMPLE UNIVERSITY MEDICAL CENTER.—The opening of a new 23-bed open floor unit for the treatment of combined mental and physical ills is announced by Dr. O. Spurgeon English, Head of the Department of Psychiatry. Although geared primarily to psychotherapeutic techniques, adjunctive treatment in the new section will include the use of drugs and electroshock. Dr. Harold Winn has been named director of the new section.

SIZE OF AMERICAN FAMILIES.—The *AMA News* quotes U. S. Census report that the size of the average American family increased from 3.54 in 1950 to 3.66 in 1959. Southern families numbering 3.81 were larger than those in any other region in the United States.

FOREIGN MEDICAL GRADUATES.—Of 6,029 foreign doctors who took the examination set by the Educational Council to qualify them to practice in the United States, as reported by *AMA News*, 3,345 (55.5%)

passed (the qualifying mark was 70). Only 33.1% scored 75 or better.

THE EDWARD A. STRECKER AWARD.—The first annual Edward A. Strecker Memorial Award for "outstanding service in the field of psychiatric aftercare" was presented by Horizon House, Inc. at its eighth annual community meeting May 18, 1960. Dr. Margaret Mead, cultural anthropologist, was the principal speaker at the meeting.

Judge David L. Ullman, a director of Horizon House presented the Memorial Medal to Walter A. Munns, president of Smith Kline & French Laboratories for the active support by the Philadelphia pharmaceutical house in cooperation with state mental health authorities throughout the country of after-care programs for released mental patients. Many patients have been enabled through these services to avoid a return to the hospital, and sizable savings for the state have also resulted.

Horizon House was established in 1953. It is a non-profit center which provides social rehabilitation, individual counseling and vocational services. A psychiatrically-trained professional staff is available to the patients at all times.

Dr. Strecker was for many years head of the department of psychiatry at the University of Pennsylvania, and was one of the first directors of Horizon House.

THE INTERNATIONAL SOCIETY OF THE PSYCHOPATHOLOGY OF EXPRESSION.—The second International Congress on Psychopathological Art will take place October 7-10, 1960 in Catania, Sicily. Manuscripts for presentation at this Congress must be submitted before July 15 to Dr. Gattuso, University of Catania, Sicily. Papers will be edited in the four official languages of the Congress, French, Italian, English and German. Paintings and drawings for the Exposition of Psychological Art associated with the meeting must be sent before August 31, 1960 to the same address. Those who intend to participate may register by writing to Prof. C. Pero, University of Catania, Sicily. The President of the Society is: Professor agr. R. Volmat, Centre Psychiatrique Sainte-Anne, 1 Rue Cabanis, Paris 14, France.

BOOK REVIEWS

CURRENT TRENDS IN THE DESCRIPTION AND ANALYSIS OF BEHAVIOR. Edited by Robert A. Patton. (Pittsburgh : University of Pittsburgh Press, 1958, pp. 242. \$4.00.)

This book is the ninth in the Current Trends in Psychology Series. Like its predecessors, it contains a series of papers delivered at the University of Pittsburgh, under the auspices of the Department of Psychology. The unifying theme which was supposed to bind the papers together was one of measurement, "since there is the continuous need for the development of methods to quantify the stubborn and elusive phenomena of behavior." The title of the book even suggests that this theme, like behavior itself, is too elusive to serve as the matrix for the gallimaufry of topics presented; only a few of the papers describe quantitative methods.

Without a unifying theme to serve as the focus of critical comment, it becomes necessary to review the series of papers independently.

I found the first two articles, by Robert Glaser and by Joseph Zubin, of particular interest. Glaser's paper, "Descriptive Variables for the Study of Task-Oriented Groups," describes quantitative sociometric methods for analyzing the behavior of small groups, particularly a task-oriented group such as a gunnery team. His method is ingenious and can have wider applications to "social process" as well as "task" variables. Zubin's paper, "A Biometric Model for Psychopathology," is a critique of present-day conceptual models designed for the understanding of psychopathology. He feels that we are still in a pre-Newtonian era, "Abnormal psychology is waiting for its Newton to provide new integrating concepts." Zubin sets up a possibly useful paradigm involving various levels of observed behavior *i.e.*, conceptual, psychomotor, perceptual, sensory, and physiological. Analysis of behavior can be accomplished by comparing the responses at the various levels at the idling state and with various stimuli, inappropriate, appropriate, configural, *etc.* He feels that with this technique "the patient population can be diagnosed more objectively, prognostic indicators of outcome promulgated, and the most suitable therapy for each type of patient determined."

In "Psychophysiology and Perception," Donald B. Lindsley discusses the impact of new

information regarding the ascending reticular activating system upon psychology. The effect of ARAS upon discrimination, perception, motivation, and selective attention and its role in the elaboration and integration of sensory messages is discussed in a very lucid way. He makes a plea for a fuller knowledge of the central nervous system functions as a significant factor "in the formulation of problems and the design of experiments in psychology."

Vincent Nowlis, in his paper, "On the Use of Drugs in the Analysis of Complex Human Behavior with Emphasis on the Study of Mood," describes some unusual methodological gambits in which he uses drugs to "control or systematically change factors relevant to basic psychological problems." He uses drugs to study psychology, rather than psychology to study drugs, though the two cannot be altogether separated.

Roy M. Hamlin's paper, "Scientific Methodology in the Area of Psychotherapy," is rambling and discursive, although he makes some excellent criticisms of the theoretical indoctrination inherent in psychoanalytic training as it is customarily conducted. He quotes Glover as saying that "the psychoanalytic training procedure is that of a self-reinforcing system with tremendous internal resistances to change." No one can disagree with Hamlin's feeling that we ought to "analyze and evaluate psychotherapy in a thorough-going, scientific fashion." A lot of people have been saying that for years, but only now are a few doing something about it.

HAROLD I. LIEF, M.D.,
New Orleans, La.

GROWTH AND DEVELOPMENT OF CHILDREN.

By Ernest H. Watson and George H. Lowrey. 3rd ed. (Chicago : Yearbook Publishers, Inc. 1958, pp. 334. \$7.75.)

The first edition of this work was published in 1952, the second in 1954, and the appearance of a third edition in 1958 indicates that this compact book has established a permanent place for itself. Indeed, the book has become the *vade mecum* of students and pediatricians preparing for the examinations of the American Board of Pediatrics. It is an excellent book, crammed with the most useful information, most readably set out, and easily assimilated by the reader. Every aspect of the growth and development of the child is cov-

ered, and the chapter devoted to the growth and development of "Behavior and Personality" is as full of useful facts and normative standards as the rest of the book, but in certain places it suffers from an unexpected fuzziness. We are told that "The ego has been defined as the seat of consciousness, and it controls voluntary actions." Such an archaism is surely going to be the reverse of helpful to the reader. There is no evidence anywhere in this chapter that Freud ever lived and wrote. Surely Freud's view of ego development was worth half-a-dozen lines?

There is a great deal more evidence available on the effects of prenatal influences on the physical development of the organism than the authors appear to be inclined to believe, and the physiology of adolescent development would have benefited from definitions which are more in keeping with the physiological facts. At this late date one surely would expect some discussion of the phenomenon of adolescent sterility from the physical, psychological, and social viewpoints. But these are the comments of a carping reviewer. The book is first-rate, abundantly supplied with the necessary tables, figures, and illustrations, references, and a good index. It will deservedly enjoy a long and useful life.

ASHLEY MONTAGU, Ph.D.,
Princeton, N. J.

PATHOLOGY OF TUMOURS OF THE NERVOUS SYSTEM. By Dorothy S. Russell, L. J. Rubinstein, and C. E. Lumsden. (London: Edward Arnold and Baltimore: The Williams and Wilkins Co., 1959, pp. 318, figs. 286. \$13.50.)

This companion volume to *Neuropathology* by Greenfield, Blackwood, McMenemey, Meyer and Norman, (1958), is welcomed as completing the modern British views in this important field of pathology.

The early chapters of the book are concerned with congenital tumours; meningiomas (with which primary sarcomata of meninges and brain are discussed); tumours of reticular tissue and tumours and hamartomas of blood-vessels.

The main chapter of the work, on primary tumours of neuro-ectodermal origin, accepts fully the view of anaplasia or de-differentiation in the production of gliomata of increasing malignancy, but does not accept the various methods, which have been advocated, of "grading" these tumours. The term's "malignant or anaplastic" astrocytoma and "glioblastoma multiforme" are, therefore, retained.

The medulloblastoma is considered to be essentially a cerebellar tumour. It is described among the gliomata, but its possible neuro-blastic origin is discussed.

The description of pineal neoplasms is important because of the authority with which the senior author writes.

An interesting discussion of the growth and dissemination of neuro-ectodermal tumors is followed by a chapter on the important subject of deformations of the brain produced by intracranial tumours. A chapter is devoted to secondary (metastatic) tumours.

Tumours of nerve-roots, peripheral nerves and peripheral neuronal tumours are well and fully discussed.

Finally, Professor Lumsden adds a chapter on tissue-culture of brain tumours, which is mainly a description of his results of "culturing" 39 tumours of varying histological malignancy in the astrocytoma-glioblastoma group. It will be of interest to see how his interpretation of his observations tallies with that of other workers.

The format of the book is uniform with its companion volume, the illustrations are excellent and the index is adequate. It will be a valuable and comprehensive chart to all who sail the stormy seas of neoplasia of the nervous system.

ERIC A. LINELL, M.D.,
Toronto, Ont.

EPIDEMIOLOGY OF MENTAL DISORDER. Edited By Benjamin Pasamanick. (Washington, D. C.: Publication No. 69 of the American Association for the Advancement of Science, pp. 336, ill., 1959. \$6.50. [\$5.75 to members of A.A.A.S.])

The twelve papers composing this symposium were presented at the New York meeting of the American Association for the Advancement of Science, December 27-28, 1956.

The symposium was organized by the American Psychiatric Association to commemorate the centennial of the birth of Emil Kraepelin, and was cosponsored by the American Public Health Association.

In his preface Pasamanick states: "Kraepelin's greatest contribution to psychiatry was his construction of a rational and usable classification of mental diseases, the first step in the systematic investigation of the etiology of disease. It is painful to note that we have advanced little since his death and, indeed, in many areas of psychiatry have regressed to that prescientific level, the unsystematic statements of outstanding clinicians." And

he adds, "By some, categorization of disease states has been decried as unnecessary and even harmful."

The participants in this colloquium represent an extraordinarily wide range of investigation—psychiatry, psychology, sociology, public health, biostatistics, pediatrics, anthropology, genetics and medicine. Each paper is followed by a prepared discussion which contributes additional data.

The symposium was opened by Eugen Kahn's masterly Emil Kraepelin Memorial Lecture. Kahn gives not only the main features of Kraepelin's life and of his career in psychiatry but also a condensed history of psychiatry itself during the nineteenth century, to show the impact of Kraepelin's teaching and the progress his orderly classification made possible. He cites the enduring concepts of the manic-depressive states and dementia praecox which Kraepelin set up, and quotes Bleuler: "The whole idea of dementia praecox stems from Kraepelin . . . The cradle of the concept is the fifth edition of Kraepelin's *Psychiatry*, 1896." And Kahn adds: "The work of more than one generation of psychiatrists would not have been possible without Kraepelin's achievements . . . Thirty years after Kraepelin's death there is no doubt as regards the clinical validity of the most important part of his psychiatric work." Best of all, Kahn gives a portrait of Kraepelin as his students and colleagues knew him, and as only one who had worked with the master could do. •

In discussing the paper, A Survey of Mental Diseases in an Urban Population, by Pasamanick, Roberts, Lemkau and Krueger, Diethelm paid further tribute to Kraepelin. He spoke of his "contributions of great value [among which] are his diagnostic classifications which have withstood the test of time." Noting that Kraepelin had been trained in experimental psychology under Wundt, Diethelm recalls that it was he "who brought an experimental basis to psychopathology versus a merely descriptive basis." He continues: "Kraepelin was the first one, so far as I know, who introduced an interdisciplinary approach . . . placing representatives of various disciplines on the same level . . . I think that we psychiatrists should be modest and see where our place is when we work with other disciplines."

Epidemiological studies are especially difficult and time consuming and liable to hazardous deductions, and the report by Pasamanick, *et al.* of their survey in the Baltimore area exemplifies caution in drawing conclusions. Referring to the exaggeration of other recent surveys that reported "approximately

two-thirds of the population being mentally ill," these observers concluded that their own finding that "approximately one-tenth of an urban population have one or more of the relatively well-defined mental disorders is sufficiently alarming."

In a study of personality change during adolescence based on test methods, Mangus and Dager examined 384 school children at the end of their first decade of life, with retest at the end of their second decade of life while in the upper grades of high school.

The results showed "that 14.1% of the subjects changed significantly upwards in their personality test scores while 8.6% moved downward to significantly lower levels of mental health. These rates and directions of change were about the same regardless of sex, age, or IQ of the subjects."

Significant factors in these changes were found to be such events as "have important impacts on the subject's conception of himself."

Considering the epidemiological aspects of prognosis, Zubin and Burdock quote from a study by Kraepelin written in 1894 in which he forecast the possibility by means of psychological tests of detecting individual deviations, "especially of the inborn pathological disposition . . . which cannot be recognized by ordinary observation." The detection of such deviations throws light on both predisposition and prognosis. Zubin and his associates remind us that it was Kraepelin "who introduced prognosis and follow-up studies into psychiatry" by means of "longitudinal" studies of many individual patients. His *tour de force* of "diagnosis by outcome" enabled him "to disentangle the nondeteriorating from the deteriorating psychoses, and in the latter he was able to distinguish the course of organic deterioration from that of functional deterioration. Such accomplishments loom large when compared with the confusion which preceded Kraepelin."

The authors note that epidemiological studies in mental disorders are still in a very early stage of development and have been mainly concerned with etiology. But in view of the importance of environmental factors not only in causation but also in rehabilitation the need for wider epidemiological research directed to the outcome of psychiatric disabilities is obvious. Some of the specific problems of epidemiological prognosis are discussed and attention is called to the wide gap that still exists between the achievements of epidemiology in the field of physical disease and its contributions in mental disease.

It would be of interest to review all the studies reported in this book but space limits us to brief and more or less random references. It is a valuable symposium, carrying forward leads that Kraepelin opened many years ago, and by bringing together representative contemporary views and results of recent studies emphasizes the role of epidemiology in psychiatric research.

C. B. F.

PSYCHOLOGY AND RELIGION: WEST AND EAST, VOL. 11. By C. G. Jung. (New York: Pantheon Books Inc., 1958, pp. 608. \$6.00.)

This volume of collected works of Dr. Jung contains writings on Western and Eastern religions from the years 1928 through 1954. Dr. Jung's basic considerations here are with Western religions and in this volume there appears the first translation of *A Psychological Approach to the Dogma of the Trinity*.

Present day psychiatry has seen the trend toward cooperation and a better understanding between religion and psychiatry. There have been sections at the American Psychiatric meetings devoted to this topic. The Academy of Religion and Mental Health is a strong union of clergy and doctors, sitting down in an effort to understand the work of the other more clearly. Dr. Jung's masterful writings here assembled under one cover are stimulating, provocative, and I am sure in some quarters and to some individuals would be considered controversial. However one may be oriented as to religion and to the kind of psychiatric therapeutic procedures and theories followed, the material in this book would be of immense interest and definite value to everyone in psychiatry, its allied fields and religion.

There is a greater detail of concern with the religions of the West than the East. Dr. Jung makes some deductions and conclusions as to the loss of symbolism in Protestantism and the psychological strengths embodied in some of the rituals of the Catholic Church. His discussion of the dogma of the Trinity and the Assumption of Mary is coherent and challenging.

A recent Broadway production, entitled "J.B." has stirred the imagination of theologians and psychologists and there are wide variations in the attempts to explain what the author of the play meant to convey. A national magazine carried articles by 3 leading clergymen of the 3 major faiths on their own ideas about what "J.B." meant. However, Jung, in a brilliant composition entitled "An-

swer to Job," which was first written in 1952, seems to get at the heart of the matter and really scoops the learned press and our friends in the clergy. He presents a profound and interesting evolution of what was the answer to Job, God's decision to learn from Job's experience and morality, to become a man and appear as Son of God, Christ.

Dr. Jung points out that the object of mutual concern is the psychically sick and suffering human being who is in need of consideration as much from the somatic or biological standpoint as from the spiritual or religious. This work should strengthen the goals of better understanding between the two major fields of religion and psychiatry. With each re-reading the essays shed new light. Some might find the tone of Jung's comments rather dogmatic or authoritative; however, the basic impact is of stimulation, not offense, and it becomes a very worthwhile and meaningful experience that would well be shared by our fellow readers. The comments about the reign of the anti-Christ will be of specific interest, I am sure, to theologians. I would dare say that through this collection of writings one also carries away a very strong impression of the extent and depth of understanding that Dr. Jung has of the writings in the Bible and other material of history prior to the record of the Bible, and each point is buttressed by many cross references, many examples, with copious footnotes, the bibliography alone exceeding 27 pages.

Psychology and religion, west and east, will gain by the publication of works such as this by Dr. C. G. Jung.

R. B. DEITCHMAN, M.D.,
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SOCIOLOGY TODAY, PROBLEMS AND PROSPECTS. Edited by Robert K. Merton, Leonard Broom, and Leonard S. Cottrell. (New York: Basic Books, Inc., pp. 623 including index, 1959. \$7.50.)

Sociology Today is in more than one sense a monumental work. It is a large book—in format and in bulk. It embraces a series of 25 sociological expositions. Robert K. Merton writes the Introduction, Notes on Problem-Finding in Sociology.

The subtitle, "Problems and Prospects," in effect, and even as the editors affirm, but loosely, and I would add, inadequately, describes the nature and the scope of the texts presented. They embrace a good deal of historical and background data, provide much information on current works in sociology, and

sketch in judicious and critical terms the prevailing trends and countertrends in sociological thought, theory, and philosophy.

Sociology Today is neither a textbook nor yet a work to be read "from cover to cover"—save possibly by the academic sociologist who must cover the field entire. Of the 25 essays included in the volume, 2 (and also the Introduction) deal with Problems in Sociological Theory and Methodology. Eight are devoted to Problems in the Sociology of Institutions. Among the "institutions" treated are, politics, law, education, religion, the family, art, science, and medicine. Among these Bernard Barber's *The Sociology of Science* is likely to prove of particular interest to the psychiatrist and medical educator. Three essays deal with *The Group and the Person*, and 7 with Problems in Demographic and Social Structures. Five essays deal with Selected Applications of Sociology. Among these, John A. Clausen's *The Sociology of Mental Illness*, and Criminological Research by Marshall B. Clinard—are particularly pertinent to the psychiatrists' concerns.

This volume is, all in all, a first class work. It is also singularly free of the "jargonese" that is all too common in sociological texts.

IAGO GALDSTON, M.D.,
Academy of Medicine,
New York City.

THEORY OF PSYCHOANALYTIC TECHNIQUE. By Karl A. Menninger. (New York: Basic Books, Inc., 1958, pp. 206. \$4.75.)

It is now almost 30 years since Karl Menninger wrote a perennial best seller in the field of dynamic psychiatry, *The Human Mind*. It was followed by such works as *Man Against Himself*, *Love Against Hate*, various technical volumes and hundreds of scientific papers and addresses. Now he has addressed himself to a subject generally avoided by even the most prolific psychoanalytic writers.

The preface opens with a most appropriate quotation from Fenichel: "It is amazing how small a proportion of the very extensive psychoanalytic literature is devoted to psychoanalytic technique and how much less to the theory of technique." The current volume is, in the author's words, "about theory—the theory of therapy. It is not a manual of practice, but an examination of some of the psychodynamic principles operative in the practice." This is an accurate statement and answers in advance those who would find it, despite its

excellence, not encyclopaedic in content and scope.

This is no do-it-yourself handbook of psychoanalysis. It is an earnest statement of one eminent psychoanalytic scholar's concept of the theory of treatment, based upon years of assiduous study, practice and teaching. Clarified through constant exposure to the corrective comments of the keen minds of perceptive colleagues, his observations and formulations furnish a rich and rewarding field for study to the serious student of psychoanalysis.

The organization of the book is relatively simple, focusing on: (a) the psychoanalytic treatment situation as a two-party transaction or contract; (b) the regression which regularly occurs, discussed in terms of the reaction of the patient to the treatment situation; (c) transference and countertransference considered as in involuntary participation of the therapist in the treatment process; (d) resistance described in terms of the many paradoxical tendencies exhibited by the patient toward defeating the purpose of the therapeutic contract; (e) interpretation and other interventions discussed in terms of voluntary participation of the therapist, and (f) termination of the contract, the separation of the patient and therapist, which remains an unsolved riddle of analytic theory.

The book is well-written; significant writers' opinions are clearly expressed and the text is filled with apt and enlightening quotations, so characteristic of the author's style.

Many of the quotations as well as the author's opinions will probably prove surprising, both to those psychoanalytic practitioners who consider themselves orthodox in their methods and to those whose acceptance or understanding of psychoanalytic practice is skeptical at best. For example, quoting Freud: "I consider it quite justifiable to resort to more convenient methods of healing as long as there is any prospect of attaining anything by their means." This would seem to suggest that were Freud in practice today, he would certainly prefer the judicious use of electroshock treatment for severe depressions, rather than months or years of analysis.

In discussing the necessity for a certain attitude or frame of mind on the part of the psychoanalyst towards his task in the psychoanalytic situation, Menninger comments on the difficulty the average young doctor has to restrain himself from doing or saying something while the patient is struggling through the various steps of self-discovery. Menninger adds: "This restraint is very hard for the

average young doctor, particularly for the psychiatrist, to exercise—with the exception of those constitutionally passive individuals who seem to operate on the theory that healing rays emanate from them so that patients should get well by virtue of merely being exposed to those benign influences."

In discussing the fact that symptoms have no single cause but are over-determined, he quotes Tolstoy: "The combination of causes of phenomena is beyond the grasp of the human intellect. But the impulse to seek causes is innate in the soul of man."

Again in discussing the problem of not allowing contacts with the patient's family and friends to contaminate the treatment situation, the author states: "It seems to me absurd to stand on the principle that one has nothing to say to anyone but the patient. My impression is that it is often out of laziness, or lack of self-confidence, that many analysts refuse to see close relatives, thereby handicapping their efforts with the patient." In the opinion of the reviewer, the author would have done well to delineate this further, in terms of anxiety in the therapist whose degree of unconscious identification with the patient is such that to face relatives whom the patient feels are aligned against him is more than the therapist can bear—hence his position of rationalized, self-righteous isolation.

The author utilizes various schemata and paradigms, and in the case of interpretations and interventions some diagrams. In such an important schema as "Steps in the Regression," no mention is made of those instances where classic passivity is inadequate in initiating the regressive phenomena which the author (correctly, I feel) identifies as an integral part of the treatment process.

In a different sense, the author's interesting section "The Detection and Correction of Countertransference" seems most realistic and apt. Here he lists some common ways in which countertransference makes its appearance. This statement is appealingly candid, because, in the author's words, "I think that I have myself been guilty of practically all of them."

This relatively small volume has much to recommend it to the serious student of psychoanalysis, combining as it does humility, avoidance of cant, seriousness of purpose, and ideals common to the finest traditions of medical practice.

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THE SOCIETY OF CAPTIVES. By Gresham M. Sykes. (Princeton, N. J.: Princeton University Press, 1958, pp. 144. \$3.75.)

It has become axiomatic that no one lives in a vacuum, and this is particularly true in discussing socio-psychological problems. The felon has been the subject of many psychiatric and psychological studies, but the social matrix in which the convicted felon endures requires a discerning scrutiny. Psychiatrists recognize that there is a social system in the prison. Nevertheless, the "power politics" of this institution have perhaps not been so carefully examined. The present volume undertakes that examination in a serious, compact, well-thought-through study.

Professor Sykes regards the prison as a society within a society. In this way, he contrasts the implicit totalitarian regime of the custodians and its conflict with the democratic and individual-minded prisoners, as they seek to adjust to a rigid environment ordained by the larger society. Rules for order in prison life, ideas of punishment, the almost impossible task of the prisoner to adapt himself to an impossibly rigid life, the hierarchy of values among prisoners, the agents of prisoners—the "rat," center man, bully, good prisoner, the pervert—are all described and treated by the author.

The accent in this volume is not on psychopathic or emotional problems of the inmate, but on the total social structure of the prison, and of the guards. The guard, part of the totalitarian system of control, cannot escape a kind of fraternization with his prisoners; the prisoner, apparently devoted to anti-social attitudes, cannot escape absorbing some of the bureaucratic attitudes. Thus, a tight, rigid symbiosis develops within the society of captives, which has various repercussions and psychological reflections. All in all, it is the system that imposes restrictions on the man under control. It is the system that deprives the prisoner of autonomy in his daily movements, of sexual and emotional outlets. The pathology that arises in prison—homosexuality, brutality among inmates, thievery, fighting for preference, and even attempts at restitution on the part of good prisoners for cohesiveness among the prisoners, are all functions of the system. The pathology of prison life is more social than psycho-pathology. Although the author recognizes emotional instability on the part of individual inmates as determinative of some behavior, his accent is on the social system.

This orientation was further used in relation to prison riots, which the author describes as

a series of crises that make toward eventual equilibrium. He shows how riots occur when the balances within the prison system are interrupted, although the emergence of aggressive personalities into positions of leadership is also an effective force.

This slim volume by Professor Sykes is an impartial study of the prison as a social system. As such, it is objective, cleanly written and informed, and touches on vital problems within a maximum security prison set-up. Workers in penal institutions, including psychiatrists who may over-emphasize individual differences among felons in captivity, would benefit from Professor Sykes' re-emphasis on social forces existing between custodians and inmates. For without a view of the total "power" picture in the prison, one may get a biased view of the individual which might prejudice efforts at social and psychological rehabilitation of the inmate.

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PROBLEMS OF ADDICTION AND HABITUATION.

Edited by *Paul H. Hoch, M.D.*, and *Joseph Zubin, Ph.D.* (New York* and London : Grune & Stratton, 1958, pp. 250. \$6.50.)

Since this book covers the proceedings of the Forty-Seventh Annual Meeting of the American Psychopathological Association, held in New York in February, 1957, it deals with many different subjects and presents many controversial hypotheses. Many of the papers contain new material and opinions that would be helpful and interesting, for both the psychiatrist and other physicians.

Some of the papers highlight little known facts concerning addiction in a manner that would be particularly useful for the practising physician. From this standpoint, the chapter "Withdrawal Convulsions and Withdrawal Psychoses" by Lothar B. Kalinowski, M.D., of the New York State Psychiatric Institute deserves special mention.

The study of Etiology of Pica in young children as an early pattern of addiction is interesting and, in my opinion, should be included in the overall subject of addiction. In his paper, "Some Problems of Addiction," Dr. Karl M. Bowman has summarized the general problem of addiction in a masterly fashion. Although Dr. Bowman has discussed the problem of addiction to alcohol, sedatives, narcotics, stimulants, tobacco and food, he did not stress sufficiently the problem of addiction to tranquillizing drugs, in particular, meprobamate, (Equanil and Miltown). It is now recognized by many that addiction to meprobamate can

produce withdrawal convulsions and withdrawal psychoses as severe as those referred to in Dr. Kalinowski's paper. The authors of Chapter 12, "The Role of Self-Image with Respect to Craving for Alcohol" attempt to uphold a thesis that could not be supported by many physicians who have been actively engaged in the treatment and rehabilitation of the alcohol addict.

The late Dr. Lester H. Gliedman of The Johns Hopkins Hospital, Baltimore, outlined an interesting study on group therapy in the treatment of chronic alcoholism. However, the effectiveness of this chapter is somewhat impaired by Dr. Gliedman's own admission of the disappointing results of his own experience with this method. To achieve good results, a group instruction and therapy plan may need to be carried on for 1 to 2 years and success improves with clinical experience.

The commentaries by Doctors Kramer and Lasagna and Freyhan and Zwerling, constitute a very effective spotlight for the book as a whole. In my opinion, their thought-provoking analyses of the subject matter of the book is an important part of the whole publication and assists the reader in orienting quickly to the parts of the book of special interest to him.

It should be noted that this book contains a directory of the membership of The American Psychopathological Association which, of itself, would be of interest and value to many people.

This is one of the better new publications dealing with the problems of addiction and habituation. It contains the opinions of eminent authorities in the field of psychopathology and would be a valuable addition to the library of the clinician who is in any way concerned with the problem of addiction.

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PROGRESS IN NEUROLOGY AND PSYCHIATRY : AN ANNUAL REVIEW, VOL. 13. Edited by *E. A. Spiegel, M.D.* (New York : Grune and Stratton, 1958, pp. 611. \$12.00.)

This book which is published annually, reviews some 4,000 papers in the fields of Neurology and Psychiatry. It is divided into 4 sections : Neurology, Neurosurgery, Psychiatry and Basic Sciences. The scope of each section is broad, e.g., in the section on Psychiatry are the following chapters : Clinical Psychiatry ; Mental Hygiene ; Forensic Psychiatry ; Criminal Psychopathology ; Child Psychiatry ; The Neuroses ; Alcoholism ; Psychosomatic Medicine ; Psychoanalysis ; Psychological Assessment Techniques ; Group Psychotherapy ; Shock

Treatment; Psychopharmacology; Psychiatric Nursing and Occupational Therapy and Rehabilitation. Leading experts in each field review critically the significant contributions of the year. In all there are 63 authors.

Kline, in the chapter on Psychopharmacology, in view of the rapid developments in this field, gives an example of the optimistic view of some workers by quoting Gunsberg of South Africa: "I feel that in the future, within the next 25 to 50 years, as new developments take place, we shall require fewer beds for inpatients, and I am confident that the time is not far off when the present problem of overcrowding of mental hospitals will be a thing of the past, not because sufficient hospitals will have been built, but because of the present developments in therapy."

The range of subjects and the detail dealt with affords the reader with a survey of current advances and opinions. The extensive bibliography will be most useful.

The book maintains its high standards as a comprehensive annual review of the pertinent literature by recognized authorities.

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CREATIVE ACTIVITY AND THE CREATIVE PERSONALITY (in Polish). By *Maria Naksanowicz-Golaszewska*. (Poland: Catholic U. of Lublin, 1958, pp. 329.)

This first volume of a proposed larger work covers only the subject of creative activity and its product. The book is a philosophic treatise, highly abstract, and not easy to follow for one accustomed to the less abstruse symbolism of medical literature.

The author defines creative activity as a specific psychophysiologic process within one individual giving rise to an original objective product. Creative activity results from a happy constellation of many factors such as emotional and intellectual tendencies and interests, the individual's conception of his ego, and the degree of determination or will. The creative process is subjective, its product objective. Both are interdependent and react upon each other until the product is finished when it leads a separate existence and exerts influence upon other personalities. To be creative, a product must be new and original, *i.e.*, unique, must have meaning for others and more or less permanent value.

The creative process has 2 phases, psychic experience and realization. Deep psychic experience alone, such as love, is not creative though it may motivate creative effort. Day dreaming and fantasies which are flights into

the paracosmos, are an antithesis of creativity which is the most intense kind of action.

The creative process begins with a concept which gradually attains form and substance. There is no regularity in the rhythm of creativity, some works being consummated in fleeting moments, others requiring decades. The beginning and the end of the creative process are difficult to define, for a "finished" product may be but a step to future productivity. Acquisition of mechanical skills and collection of data without a creative concept, in themselves cannot lead to a creative product. The concept and its objective synthetic externalization constitute the essential heterogeneous character of creativity. When the inner experience begins to be translated into external reality, doubt creeps into the situation and may cause the concept to die within the individual. Here enters the factor of will, *i.e.*, determination to make use of one's abilities, to sacrifice other equally attractive interests, to select from the environment elements favorable to one's project, to reject others, and to resist illusions and prejudices tending to modify the goal to be achieved. The author believes that a measure of free choice must be assumed as being indispensable for creative action. Moreover, she stresses the doctrine of the individual creator against the theory of precursors and co-creators. She believes that a created product worthy of the name, is always the work of one individual. Even when a person bases his work upon an idea of another, the latter is not a creator for he failed to attain the phase of realization. The author distinguishes 4 spheres of creative action: artistic, scientific, technical, and methodological—each envisaging a different aspect of man's contact with reality.

Her emphasis upon the individual in the genesis of creative works is in contrast to the current sociologic and anthropologic theories which depreciate the individual and regard creativity as little more than a reflection of the culture of the period. She also disagrees with those who assert that unfavorable circumstances thwart creative ability. If they do, she states, then the individual lacks true talent or strength or both. These unorthodox and debatable views are interesting, coming as they do from an area of the world where the official social philosophy has been conformity of individual thinking and acting to the higher dictates and direction of the state. To us in the U. S. A. they should serve as a reminder that fruitful creative action is not necessarily measured by the size and wealth of the research institutions.

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TREATMENT OF SCHIZOPHRENIC REACTIONS WITH PHENOTHIAZINE DERIVATIVES

A Comparative Study of Chlorpromazine, Trifluorpromazine, Mepazine, Prochlorperazine, Perphenazine, and Phenobarbital¹

JESSE F. CASEY, M.D.,² JULIAN J. LASKY, Ph.D.,
C. JAMES KLETT, Ph.D.,³ AND LEO E. HOLLISTER, M.D.⁴

Since chlorpromazine⁵ has been proved useful in treating chronic hospitalized schizophrenics (1, 2, 3, 4), newer phenothiazine derivatives have appeared with claims of higher potency, greater therapeutic effectiveness, and fewer side effects or compli-

cations. After reviewing the voluminous literature, the harried clinician might still wonder whether any of the newer compounds were superior in any way. The reports on mepazine, for example, have ranged from enthusiastic endorsement to unqualified rejection (5, 6, 7, 8, 9): Bowes concluded that mepazine was twice as strong as, interchangeable and synergistic with chlorpromazine; Denber's sober title, "Ineffectiveness of mepazine . . ." completed the spectrum of opinion.

Recently more definitive studies of the newer phenothiazine derivatives have appeared (10, 11). Although these studies still contain contradictions, the differences are more understandable. In Freyhan's study of 10 phenothiazine compounds and reserpine, chlorpromazine was more effective than mepazine, reserpine, and promazine. It is inferred from his data that perphenazine, prochlorperazine, trifluoperazine and trifluorpromazine were not more effective than chlorpromazine, although he makes it clear that they caused more extrapyramidal reactions. Goldman differed with Freyhan, stating that perphenazine, prochlorperazine, and trifluorpromazine were more effective than chlorpromazine, caused fewer side effects and practically no complications. He could not differentiate therapeutically between perphenazine and prochlorperazine but found that trifluorpromazine produced fewer side effects than either. Some of these contradictions appear to be due to the use of different dosage schedules, criteria of improvement, treatment goals, and population samples.

With this and its own experience as a background (12, 13), the Veterans Administration began, in May 1958, a large-scale cooperative study of the relative therapeutic

¹ Project 3 of the Veterans Administration Cooperative Studies of Chemotherapy in Psychiatry. Preliminary results were presented at the Fourth Annual Research Conference on Chemotherapy in Psychiatry, VA Hospital, Memphis, Tenn., May 20, 1959. The indicated authorship connotes roles in planning or coordinating the study and preparing this report. Others who made major contributions were: T. G. Andrews, Ph.D., J. L. Bennett, M.D., E. M. Caffey, Jr., M.D., H. M. Houtchens, Ph.D., C. J. Lindley, M.A., M. Lorr, Ph.D., A. S. Marrazzi, M.D., A. Pokorney, M.D., and M. Rosenblum, M.D. The 35 VA hospitals which participated in this study are located at: Albany, N. Y., American Lake, Wash., Ann Arbor, Mich., Augusta, Ga., Battle Creek, Mich., Bay Pines, Fla., Biloxi, Miss., Brockton, Mass., Bronx, N. Y., Buffalo, N. Y., Coatesville, Pa., Danville, Ill., Denver, Colo., Downey, Ill., Fort Meade, S. Dak., Houston, Tex., Jefferson Barracks, Mo., Los Angeles, Calif., Lyons, N. J., Montrose, N. Y., Murfreesboro, Tenn., New York, N. Y., Northampton, Mass., North Little Rock, Ark., Northport, N. Y., Palo Alto, Calif., Perry Point, Md., Roseburg, Ore., Salt Lake City, Utah, Sepulveda, Calif., Togus, Me., Tomah, Wis., Topeka, Kan., Tuskegee, Ala., and Waco, Tex. Without the generous cooperation of staff personnel from these hospitals, this study would not have been possible.

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⁵ The generic and trade names of the drugs used in this study are: chlorpromazine—Thorazine (donated by Smith, Kline and French Laboratories), mepazine—Pacatal (Warner-Chilcott Laboratories), perphenazine—Trilafon (Schering Corporation), prochlorperazine—Compazine (Smith Kline and French), trifluorpromazine—Vesprin (E. R. Squibb and Sons).

effectiveness and toxicity of chlorpromazine, triflupromazine, mepazine, prochlorperazine, and perphenazine. Phenobarbital was used as a control medication.

PROCEDURE⁶

Patient Sample : Six hundred forty newly admitted schizophrenic men were studied in 35 VA hospitals. The average patient was 34 years old (the median was also 34), and the range was 18-54 years. He weighed 161 pounds, had finished 10% grades, had been a semi-skilled worker, and was first treated for mental illness 7½ years before his current admission. About half the patients were single, 30% were married, and the rest were divorced (10%) or separated (8%). The number of previous hospitalizations were as follows: none-18%, one-23%, two or three-27%, four or five-21%, six or more-11%. Forty-four percent had never received tranquilizers previously. All were in good physical health.

As measured by the Multidimensional Scale for Rating Psychiatric Patients-MSRPP(14), the average study patient before treatment was a little sicker, in general, but as active and no more depressed than the general population of schizophrenic men hospitalized in VA hospitals. He was somewhat more resistive, belligerent, withdrawn, and conceptually disorganized than the usual hospitalized schizophrenic veteran and markedly more paranoid, self-depreciatory, mentally agitated, active, and perceptually confused.

The attrition in the sample by the end of the study was 26%. One hundred fifty patients were dropped from the study. An additional 18 could not be included because of incomplete data. During the study period 85 patients left the hospital: 43 without medical approval, 24 on trial visits, and 18 by approved discharge. Also eliminated were 23 patients who were worse or had shown no improvement, 16 who refused medication, 4 who became seriously depressed, and 1 who was transferred. Finally,

21 patients were dropped; 12 because of side effects and 9 due to deviant laboratory findings.

Drugs, Dosage, Duration of Treatment: Identical-appearing coded medications were supplied to the hospitals from a central point in the following strength capsules: chlorpromazine, 50 and 200 mg.; triflupromazine and mepazine, 25 and 50 mg.; prochlorperazine, 10 and 25 mg.; perphenazine, 8, and 16 mg.; phenobarbital, 32 mg. These doses were chosen as equivalent on the basis of the manufacturer's recommendations. During the first 4 weeks of treatment, a fixed progressive dosage schedule was followed in all treatment groups: day 1; one low strength capsule; day 2, two low strength; day 3, three low strength; day 4, one high strength; days 5 through 14, two high strength; days 15 through 28, three high strength. During the remaining 8 weeks of the study, a flexible schedule was used in which the physician adjusted the dose, within limits of 1 to 6 high strength capsules daily, to produce optimal therapeutic effects in his individual patients.

Figure 1 shows the average number of capsules prescribed per week during the fifth through the twelfth weeks for patients in each of the 6 treatment groups. The average daily dose of each drug during the flexible dosage period was as follows: chlorpromazine, 635 mg.; triflupromazine, 175 mg.; mepazine, 190 mg.; prochlorperazine, 90 mg.; and perphenazine, 50 mg.

After the fifth week there were reliable variations among the treatment groups in number of capsules prescribed. Fewer capsules were prescribed for chlorpromazine patients than for any other group during the sixth week. In the eighth week and for the remainder of the study, significantly fewer capsules were prescribed for chlorpromazine and perphenazine patients than for mepazine or phenobarbital patients. Physicians used the full range of 1 to 6 capsules daily for each medication.

METHODS OF EVALUATING TREATMENT

Clinical Status: Clinical changes in patients were measured by two rating de-

⁶ The study protocol, reproduced in its entirety in the Transactions of the Third Annual Research Conference in Chemotherapy in Psychiatry, contains considerable detail concerning selection of patients, the randomization procedures, precautions, restrictions, laboratory controls and forms.

⁷ All differences discussed are statistically significant at or beyond the .05 level.

Average Weekly Dose of Capsules During the Flexible Dosage Period.

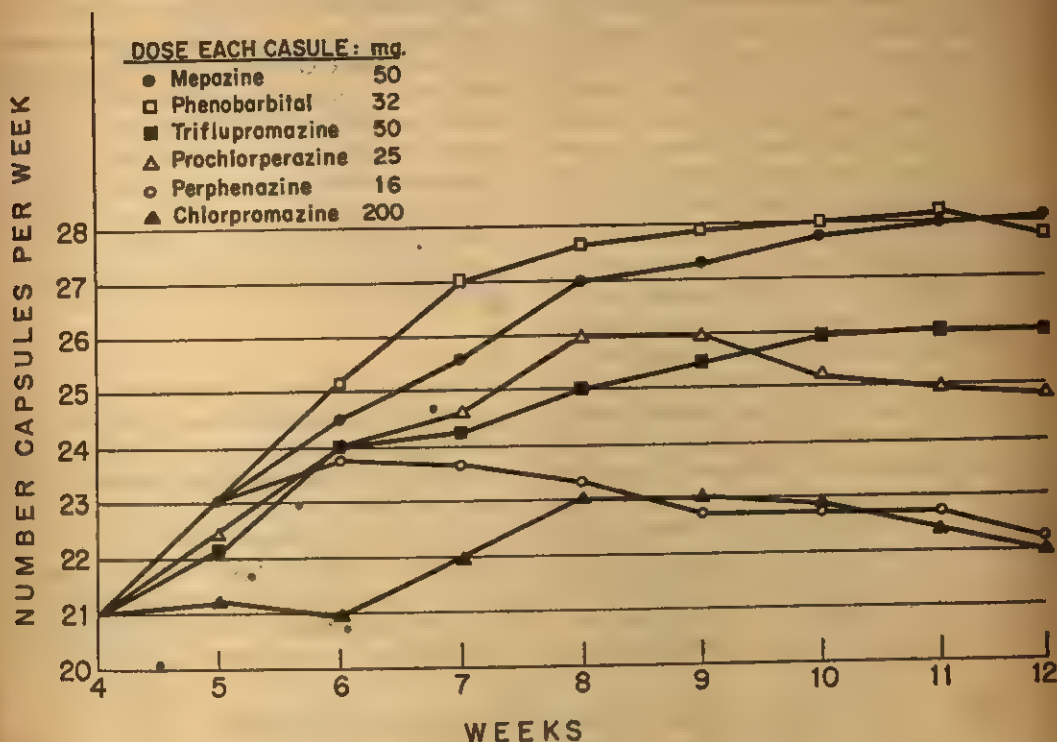


FIGURE 1

vices: the MSRPP and the Clinical Estimate of Psychiatric Status scale-CEPS(15). The MSRPP consists of two parts, the clinical interview section completed by a 2- or 3-man team of psychologists and psychiatrists, and a ward behavior section based on the observations of a 2- or 3-person team of nurses and nursing assistants. The MSRPP yields a total morbidity score which is an overall index of psychopathology and 11 additional scores which represent symptom clusters. The reliability of the MSRPP was estimated by having each member of the clinical and ward teams make their pre-treatment judgments independently before arriving at team consensus evaluations(16). The CEPS required judgments from psychiatrists on 12 items of psychopathology and prognosis. Patients were evaluated by both rating devices before and after 4 and 12 weeks of treatment.

Untoward Symptoms: The presence or absence of 18 specific symptoms and signs were checked and recorded weekly by the

physician. These included adverse behavioral effects, disturbances of the central and autonomic nervous systems and allergic reactions, chosen on the basis of known side effects of the phenothiazines.

Laboratory Measures: Hematologic tests included differential and total leucocyte counts obtained just before treatment and each week during treatment. Serum glutamic oxalacetic-transaminase (SGO-T) or serum alkaline phosphatase determinations were used as screening hepatic tests. Either of these tests was requested before treatment and then weekly for the first 5 weeks. If either was abnormal, a battery of additional hepatic tests was to be ordered. Pulse rate and blood pressure were recorded daily for the first weeks of treatment and morning temperatures were recorded daily for the first 8 weeks.

STATISTICAL ANALYSIS

The statistical model for evaluating the relative therapeutic effectiveness of the

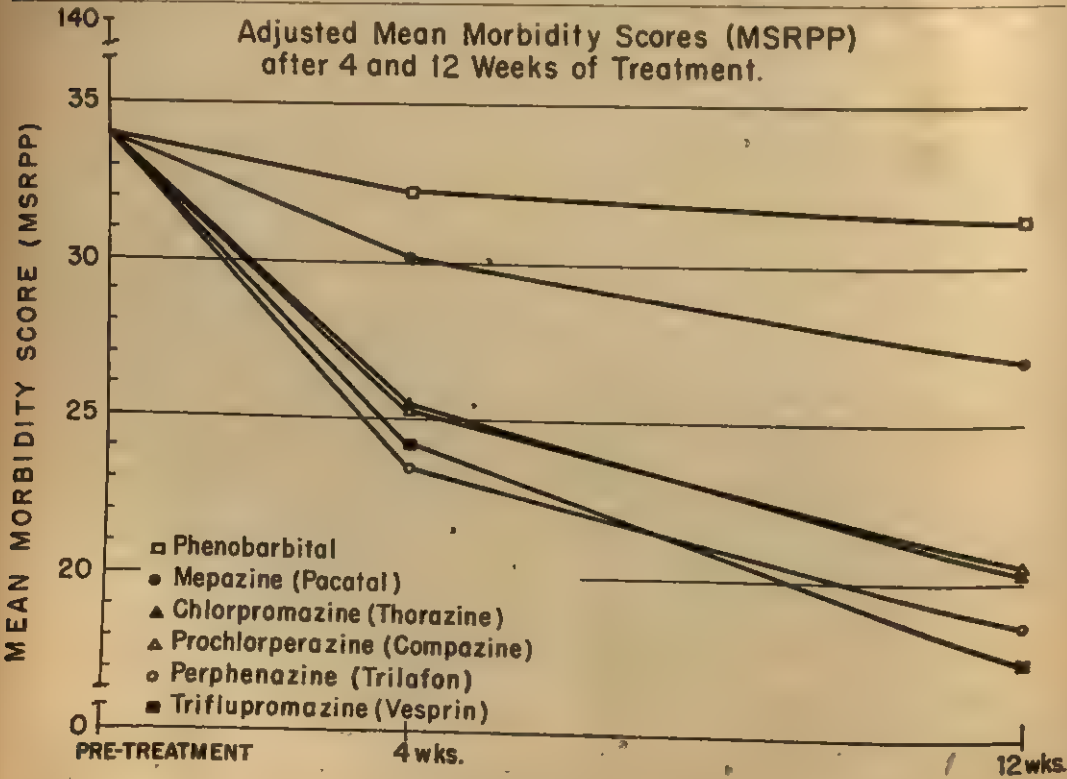
study drugs was analysis of multiple covariance (simple randomized design). Each of the 24 criterion measures derived from the MSRPP and CEPS was analyzed for relative changes in clinical status during the first 4 weeks, the following 8 weeks, and over the entire 12-week study period. Final criterion mean scores in each analysis were adjusted for initial status on the criterion being analyzed as well as for the net effect of 11 control variables: age, education, occupational level, marital status, number of previous hospitalizations, nature of onset of first and current illness, months since condition first required medical attention, initial weight, history of previous tranquilizers and morbidity. In addition to adjusting the criterion means of the 6 treatment groups for whatever differences existed prior to treatment despite random assignment, this technique statistically eliminated that portion of the variability of the criterion associated with the covariates. The net effect of the adjustment was to provide statistical equality of the treatment groups

prior to treatment and to reduce the error term used in evaluating mean differences.

One thousand and eighty comparisons were carried out; each of 6 treatment groups being compared with each other, yielding 15 comparisons for each of 24 criteria over each of three time periods. The effect of making so many comparisons is to increase the likelihood of deciding there is a significant difference when in fact there is not. The findings were subjected to a multiple range test(17, 18) for protection against this kind of error.

RESULTS

Criteria of Clinical Effectiveness: Adjusted mean morbidity scores (MSRPP) for each of the 6 treatment groups are shown in Figure 2. The pretreatment mean is based upon the entire sample of patients. Even at the end of 4 weeks of treatment, a significant reduction in total morbidity had been produced by chlorpromazine, triflupromazine, prochlorperazine, and perphenazine as compared with phenobarbital. The differ-



EVALUATION PERIOD
FIGURE 2

ence between mepazine and phenobarbital was not significant at this time. When 12 weeks of treatment had been completed, all 5 phenothiazines had reduced morbidity significantly more than phenobarbital. Four of the phenothiazines were superior to mepazine at both the 4th and 12th week evaluations. There were no significant differences among the 4 more effective drugs. Even though the differences shown in Figure 2 between prochlorperazine and triflupromazine may appear to approach significance, this difference has a *p* value $> .20$.

The results of the analyses of relative change in the remaining 23 criteria of clinical effectiveness have been organized in Table 1 to emphasize the 3 main findings which occurred during two time periods.⁸

⁸ Detailed statistical tables containing the adjusted means, *F* ratios, and results of the multiple range test for all criteria at the three evaluation periods may be found as a supplement in the Appendix of the Transactions of the Fourth Annual

1. All five phenothiazine derivatives were therapeutically effective, i.e., they were superior to phenobarbital, the control drug, in respect to some important criteria of improvement. There were no instances in which the phenobarbital group showed reliably greater improvement than the phenothiazine groups. The ways in which all phenothiazines were superior to phenobarbital are shown in the upper portion of Table 1.

2. One of the phenothiazine derivatives was less effective than the other four. In every instance that mepazine surpassed phenobarbital, all other phenothiazines also did so. In the middle portion of Table 1 are listed those criteria of clinical effectiveness on which all phenothiazines except mepazine exceeded phenobarbital. In the lower third of Figure 1 are presented those cri-

Research Conference on Chemotherapy in Psychiatry. Inquiries concerning additional statistical or procedural details may be directed to the Central NP Research Laboratory, Perry Point, Md.

TABLE 1

CLINICAL DIFFERENCES BETWEEN VARIOUS PHENOTHIAZINE DERIVATIVES AND PHENOBARBITAL OR MEPAZINE IN NEWLY ADMITTED SCHIZOPHRENIC MEN

Patients receiving chlorpromazine, mepazine, perphenazine, prochlorperazine and triflupromazine were more improved than those receiving phenobarbital in the following ways:

After 4 Weeks

Less: resistive; belligerent; thinking disturbance; nursing care required.

After 12 Weeks

Same gains as after 4 weeks plus: less likely to injure others; greater chance for early discharge; greater chance for independence and self-support following discharge; illness less severe; condition improving; decrease in symptoms.

Patients receiving chlorpromazine, perphenazine, prochlorperazine and triflupromazine were noted more improved than those receiving phenobarbital in the following additional ways:

After 4 Weeks

Less: motor disturbance; likely to injure self. Decrease in symptoms, illness less severe, condition improving.

After 12 Weeks

Less: motor disturbance; likely to injure self; paranoid projection; perceptual distortion; AWOL potential. More participation in activities.

Patients receiving chlorpromazine, perphenazine, prochlorperazine and triflupromazine were more improved than those receiving mepazine as follows:

After 4 Weeks

Less: paranoid projection; motor disturbance.

After 12 Weeks

Less: motor disturbance; perceptual distortion; belligerence; thinking disturbance; likely to injure others; melancholy agitation. Decreased symptoms and greater chance for discharge. Condition improving.

teria with respect to which chlorpromazine, trifluorpromazine, prochlorperazine, and perphenazine were better than mepazine. There were no instances in which any of these phenothiazines was reliably worse than mepazine.

3. *The remaining four phenothiazine derivatives were not differentiated from one another in therapeutic effectiveness.* Over the entire 3-month period there were no significant differences among these 4 treatment groups on any of the 24 criteria.

SIDE EFFECTS AND LABORATORY FINDINGS

Only 21 patients (3%) were discontinued from treatment because of side reactions or deviant laboratory tests, this number being fairly evenly distributed among the 6 treatment groups. Five patients were dropped because of leucopenia. Four had deviant hepatic tests. Other reasons for termination included: 3 cases of Parkinsonism, 1 epigastric pain, 1 photophobia, 1 dermatitis, 2 deviant temperature or blood pressure, and 4 patients who became pale, nauseated, weak or hypotensive.

A detailed report of the abnormal symptoms, signs and laboratory tests has been published elsewhere(19). The piperazinyl-phenothiazines, perphenazine and prochlorperazine, produced most of the side effects followed by the aliphatic phenothiazines, chlorpromazine and trifluorpromazine. Mepazine and phenobarbital produced the fewest side effects. Although the extrapyramidal syndrome was unique for the phenothiazines (and most pronounced with the piperazinyl derivatives), most of the other side effects measured, including adverse behavioral reactions and autonomic nervous system effects, were also reported in some measure for phenobarbital. Hematologic changes (leucopenia, eosinophilia, and leucocytosis) were encountered with all drugs without significant differences in frequency. The same was true of abnormal hepatic tests, none of the patients having a definite clinical picture of jaundice.

DISCUSSION

Since this study was designed as a comparative evaluation of 4 newer phenothiazines with chlorpromazine serving as a standard or reference treatment, emphasis

was placed upon the *relative* effectiveness and toxicity of these 5 agents rather than the evaluation of any one considered independently. Phenobarbital, mimicking some of the properties of the phenothiazines, was included as an active placebo. To be considered an effective agent, any phenothiazine derivative should be superior, at least, to a conventional sedative.

The fact that all the phenothiazines studied were effective in reducing some aspects of psychopathology is evident from their comparison with phenobarbital and is consistent with most published reports. Of greater interest are the symptoms affected. After one month of treatment with these drugs, patients were less resistive, belligerent, and disturbed in their thinking than patients receiving phenobarbital. These changes were accompanied by a decrease in the amount of physical nursing care required. Further gains were made during the last two months of the study. Psychiatric judgments indicated that patients receiving the phenothiazine derivatives had better prospects for early discharge and were more likely to be independent and self-supporting after discharge than patients receiving phenobarbital.

In short, any of the 5 phenothiazine derivatives produced clinical effects superior to phenobarbital. It is inferred that these 5 agents would be superior to an inert placebo group or to a group that had received no capsules at all. The reduction in morbidity of the phenobarbital group during treatment was slight and did not reach significance. A previous VA cooperative study based on a large sample of chronic schizophrenic patients demonstrated that neither a placebo nor phenobarbital had therapeutic value nor was either more effective than the other(1).

Although all the phenothiazines were more effective than phenobarbital, mepazine was less effective than the other four. This finding may be related to differences in chemical structure as discussed by Himwich(20). One explanation of mepazine's apparent inferiority might be that it had been used at too low a dose. During most of the first month of treatment, mepazine patients received 150 mgs./day, the lower limit of the range of maximal therapeutic

effectiveness as defined by Feldman(21). The largest amount a patient in this study could receive during the flexible dosage period was 300 mgs./day, the upper limit of Feldman's range. That 150 mgs./day was not optimal is clearly demonstrated by the increments in mean dosage of mepazine shown in Figure 1. Although the mean daily dose of mepazine given to patients during the flexible dosage period was 190 mgs., in the final weeks of the study, approximately a third of these patients were receiving the maximum amount allowed by the study protocol (300 mgs.) and side effects were minimal. In the light of current knowledge, it may be assumed that the unit dose of mepazine used in this study should have been approximately that of chlorpromazine.

The interpretation of the finding that the 4 remaining phenothiazines did not differ significantly is not an obvious one. Statistical logic does not permit the conclusion that these compounds are identical in action. Interpretation must be guided by the experimental conditions which produced the results. The purpose of random assignment of patients to treatment, the double blind procedure and statistical adjustment for initial differences was to prevent one treatment group from having an advantage over any other except in terms of the treatment being evaluated. The flexible dosage schedule was chosen to allow each drug to be evaluated at approximately optimal dosage. The choice of criteria of clinical effectiveness was intended to encompass a large portion of the domain of psychopathology. The reliability of the MSRPP was investigated and considered satisfactory. However, some may feel that such measures are either too insensitive to capture the subtle nuances of drug differences or have missed important areas of behavioral change. Within the limitations of this design, the findings are consistent and are considered reliable.

The high dropout rate (168 patients, 26%) in this study raised two questions. First, was there any evidence of selective dropout related to treatment group? In terms of total number of dropouts in each treatment group from all causes, there were no significant differences between the

groups. However, a disproportionate number of patients on triflupromazine were out of the hospital (26 of a total of 85) prior to the end of the treatment period. It is difficult to evaluate this as a biasing factor, in that 16 of these patients left against medical advice or without permission, which may not necessarily relate to the results of treatment. A disproportionate number of patients on phenobarbital and mepazine (16 of a total of 23) were dropped because of lack of improvement or worsening of their condition. This situation was consistent with the clinical findings and did not constitute a source of obscuring bias. Second, were these patients different in any way from those completing the study? Patients who left the hospital prior to the end of the study for whatever reason were in general not as ill initially as those remaining until the end of the study. Patients leaving without medical approval, the greatest number of whom were in the triflupromazine group, had lower morbidity scores, were less depressed and withdrawn and showed less disturbance in thinking before treatment than did those who remained in treatment for the entire period.

When this study was conceived, the controlled evaluation of side reactions and abnormal laboratory results during therapy with phenothiazine drugs was considered potentially more important than therapeutic differences between the drugs. In some respects this prediction was true, though not in the manner thought. The most outstanding finding was the comparative paucity of severe abnormalities, accounting for only a 3% loss in the total sample. Next in interest was the lack of difference in prevalence of abnormal symptoms, signs, and laboratory tests between the phenothiazines and, surprisingly, phenobarbital. In the case of phenobarbital, these abnormalities included such adverse behavioral effects as depression or agitation, autonomic effects such as blurred vision or dry mucous membranes, such presumed central nervous effects as akathisia, as well as eosinophilia, leucocytosis, leucopenia and abnormal hepatic tests. In many instances, these abnormalities probably represented manifestations of schizophrenia or spontaneous fluctuations completely unrelated to drug

therapy. The failure to encounter any instance of frank jaundice or agranulocytosis in 530 patients treated with phenothiazine derivatives suggests that these complications may have been more feared in the past than was warranted. In view of the frequent abnormalities associated with phenobarbital therapy, especially those not commonly attributed to this drug before, one must be cautious in ascribing all that happens during drug therapy to the drugs being used. The original intent to discover some index between therapeutic effectiveness of the drugs and side reactions or laboratory abnormalities was not feasible with so little difference between the agents in either regard.

Although this study offers considerable information regarding the clinical effectiveness, side effects, and toxicity of 5 phenothiazines used under the described conditions, the data necessary to guide drug therapy of individual schizophrenic patients are not provided. With the data from this and other studies and his personal experience with drugs as background material, the physician must still select a specific drug for an individual patient, taking into consideration such factors as speed of action; dosage schedules; treatment goals; combinations, potentiation, and sequences of drugs; duration of effects; calculated risks and safety; convenience; cost; subjective patient response; compatibility with other treatments; and any special features or unique advantages of a given drug.

SUMMARY

Six hundred forty newly-admitted schizophrenic men in 35 VA hospitals were randomly assigned to chlorpromazine, triflupromazine, mepazine, prochlorperazine, perphenazine and phenobarbital groups. Treatment followed a double blind procedure for 12 weeks. Patients were started on low "equivalent" doses of each drug which were gradually increased in a predetermined manner during the first 4 weeks. During the final 8 weeks, each prescribing physician adjusted the dose for each of his patients in order to evoke an optimal therapeutic response.

Average daily doses during the flexible period were: chlorpromazine, 635 mg.;

triflupromazine, 175 mg.; mepazine, 190 mg.; prochlorperazine, 90 mg.; and perphenazine, 50 mg. Clinical evaluations using two rating scales provided 24 criteria of change. For each criterion, the mean of each of the 6 treatment groups adjusted for the net effect of 12 control variables was compared by analysis of multiple covariance with the mean of every other treatment group at each of three evaluation periods; first month, the following 2 months, and over the entire 3 months. Side effects, hematologic and hepatic function data were also recorded during the course of treatment. One hundred sixty-eight patients failed to complete the study.

In general, the results indicated that all 5 phenothiazine derivatives were therapeutically more effective than phenobarbital. Mepazine was less effective than the other 4 drugs at the doses employed. No significant differences in therapeutic efficacy were noted between chlorpromazine, triflupromazine, prochlorperazine, and perphenazine. Criterion measures showing change toward improvement after treatment with phenothiazine derivatives included resistiveness, belligerence, thinking disturbance, and degree of illness. Other criteria affected favorably, especially by the 4 more potent phenothiazines, were motor disturbance, paranoid projection, perceptual distortion and withdrawal.

Only 21 patients (3%) were discontinued from treatment because of side reactions or deviant laboratory tests. Most side reactions, especially the extrapyramidal syndromes, were produced by perphenazine and prochlorperazine. Phenobarbital was associated with a number of side reactions ("turbulence," autonomic symptoms) commonly attributed only to the phenothiazine derivatives. Abnormal hematologic tests including eosinophilia, leucocytosis and leucopenia were neither frequent nor severe. The distribution of the 36 patients with leucopenia was not significantly different among the treatment groups. Continued treatment with the drugs in 31 leucopenic patients produced no case of agranulocytosis. Although abnormal hepatic tests occurred in 88 patients, these were sporadic. No clear-cut case of jaundice or hepatic dysfunction was encountered during treatment.

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MODES OF ABSTRACT THINKING AND PSYCHOSIS

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Surprisingly little interest has been taken in recent decades by either psychiatrists or psychologists in the ways in which people think. Evidence of this is the present widespread rejection of the distinction between the schizophrenic and paranoid groups of psychoses, established by psychiatrists at the turn of the century on the basis of the difference they observed in the types of abstract thought found in these two conditions. The fact that this difference exists has never been denied, it is now not considered of sufficient importance to justify the distinction into two illnesses. However, in medicine when the aetiology of an illness is not known, it is considered a separate condition if a common symptomatology and prognosis is present. In this case, along with the difference in thinking between schizophrenia and paranoia there is also a difference in outcome. It therefore seems that a prejudice exists against considering intellectual processes as symptoms. This is further evidence of the influence of psycho-analytic thought on orthodox psychiatry, as within that frame-work it is impossible to consider modes of thinking as other than secondary to emotional disturbances. Freud (1) himself led the way in abandoning the distinction between these two conditions when he based his theory of paranoia on the autobiographical writings of a patient suffering from schizophrenia—"paranoid" schizophrenia (another lamentable instance of the confusion wrought in psychiatry by the use of adjectives in an entirely different sense from their nouns(2, 3). This disinterest has again been demonstrated in the neglect of Bleuler's brilliant description(4) of the mode of thinking which he termed a "loosening of the associational structure" and which he considered the primary symptom of schizophrenia. This valuable finding is rendered meaningless if the paranoid group of psychoses are included as a sub-group of schizophrenia, when as Bleuler emphasised,

they are characterised by an entirely different, one could say opposite, form of thinking.

Just as knowledge of the physiological and pathological disturbance of organs often throws light on their mode of function, so study of these variations in thinking may provide insight into its mechanism. Bleuler put forward such a theory, based on his findings on schizophrenic thought, which may well repay examination :

In analysing the disturbance of association, we must realise the influences which actually guide our thinking. Associations formed in terms of habit, similarity, subordination, causality, *etc.*, of course will never generate truly fertile thoughts. Only the goal-directed concept can weld the links of the associative chain into logical thought. (For example), the idea of water is quite different depending on whether it relates to chemistry, physiology, navigation, landscape, inundation or source of power. Each of these special ideas becomes connected with the other ideas by a quite different set of threads. No healthy person thinks of soda-water when his house is being swept away by a flood ; nor will he think of water as a medium of transportation when he is thirsty . . . in the normal mind only those particular concepts dominate the picture that belong to a given frame of reference . . . the (schizophrenic) patients may lose themselves in the most irrelevant side-associations, and a uniform chain of thought does not come about. . . . (Schizophrenic) thinking operates with ideas and concepts which have no, or a completely insufficient, connection with the main idea and should be excluded from the thought-process. It is probable that in the normal psyche there are inhibitions which prevent the use of disparate associational material and hinder the transition to another theme. . . . The best known result of these tendencies is the "constriction of the field of conscious awareness"; that is the inability of healthy people to think of several different things simultaneously. . . . If these inhibitions can be overcome in the normal psyche, it is obvious they can fail completely in schizophrenics . . . (a) *lack of inhibition*. . . .

Thus, from his observations of schizophrenic thought, Bleuler independently ar-

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rived at an identical theory of mental function as did Pavlov from his experiments with conditional reflexes in dogs, viz. that a mental act proceeded by the excitation of appropriate associations while the rest of the associations were placed under a state of inhibition. Pavlov(5) also found that dogs varied in "personality" according to the strength or weakness of these processes and considered human beings would show similar differences. That is, what Bleuler considered a symptom of schizophrenia—a weakness of inhibition—Pavlov found in some dogs as a permanent condition, producing a typical "personality." If we were to accept Pavlov's findings, we would put forward the hypothesis that the type of thinking found in schizophrenia is in fact one variety of normal thought and has been considered a symptom of schizophrenia because it occurs in most patients with this illness, often in a more marked form. This is actually the conclusion the author came to from observing the thought processes of both schizophrenics and normals. It was initially noticed that, as many schizophrenic patients improved, the grosser forms of thought disturbance such as the tendency to invent new words, or to be so disconnected in their thinking as to be unintelligible, disappeared. There was then left a characteristic type of abstract thinking. If a patient showing this form of thinking was encouraged to express ideas and form opinions rather than recount past experiences, there became obvious a certain vagueness or imprecision in his concept formation, so that his exact meaning was never clear. Also he would introduce new material the relevance of which was only partly, if at all, apparent. Of course this difference in type of thinking is quite subtle and at times is only apparent after some minutes' conversation, but it was shown by the majority of the author's patients diagnosed as suffering from schizophrenia, and rarely by patients with other conditions.

If the majority of mankind were colour-blind, persons without this defect would encounter great difficulty in persuading their fellows that objects could be distinguished by their colour. Observations in psychiatry are often so subjective that in

attempting to establish them, one feels placed in a somewhat similar position. The existence of a different type of thinking in otherwise normal people has been noticed previously by at least two psychiatrists and yet failed to be accepted. Bleuler said of the thought disorder he described, which is clearly identical with that noted by the author, that it persisted in cured or latent schizophrenics though it may require "patient and persistent observation to reveal it." Skottowe(6) described the thinking of many of his schizophrenic patients as showing what he called dys-symbols, which he defined as :

a state of mind which manifests itself by the inability of the patient to formulate his conceptual thoughts upon personal topics or to discriminate the gradations of his emotions in language which is intelligible to others, notwithstanding that he may be in a state of clear consciousness, while he still retains word utilizing ability at the level of perceptual thinking and is not aphasic in terms of sensorimotor neurology.

It is clear that the type of thought disorder described by Bleuler would produce this inability, though Skottowe may have noted it only in relation to the patient's thoughts on personal topics or his emotions, as these are generally the subjects discussed in a psychiatric interview. Skottowe emphasised that this disturbance in thinking always persisted in spite of treatment.

If this type of thinking in a schizophrenic patient never disappears, even though he may recover from the schizophrenic episode in all other respects, might it not have preceded the illness, in fact, have characterised the patient's thinking all his life? If so, one would expect to find a percentage of normal individuals showing this type of thinking who have never had a psychiatric illness. This is what the author has observed. As this type of thinking became a clearly defined entity, it was noticed that some of his acquaintances showed it as clearly as did the recovered schizophrenics.

Actually there was a precedent for this observation also. Rapaport(7) when investigating the value of his Object Sorting Test found that if he scored it so as to indicate the presence of "loose" associations in his subjects' thinking, schizophrenic pa-

tients scored highly, but so did a proportion of his normal control group, an indication that the type of thinking found in schizophrenic patients was also present in a percentage of normal individuals. This finding was followed up in a study by Lovibond and the author already partly reported (8), which utilised the model of thinking provided by Bleuler and Pavlov.

Using this model, one would postulate that irrelevant associations in thinking are due to a general weakness of inhibition affecting all associations and therefore that the concepts formed by a subject would show a constant degree of irrelevance irrespective of their content. Hence if a subject could be encouraged to form concepts whose degree of irrelevance could be measured, even though these concepts were completely unrelated to his personal or emotional problems, the measurement should correlate with the presence of this type of thinking observed in a clinical interview.

An Object Sorting Test provides concepts measurable in this way. In this type of test one asks the subject why various groups of objects belong together. The degree to which his answer applies to objects not included in the group provides a measure of its irrelevance. For instance, Rapaport's test utilises 33 objects commonly encountered in everyday experience. A series of groups selected from these are presented to the subject, each group implying an abstract-conceptual definition of the objects in it, such as "eating utensils," "smoking requisites," "red" objects. The subject is asked "Why do all these objects belong together?" The degree to which his answer includes objects not in the group presented is a measure of its irrelevance. A score of one may be given to definitions of belongingness which would include not only the test group, but half the remaining test material also (e.g. "They all burn"); a score of two to definitions which would include all the test material (e.g. "They all belong in a house"); and a score of three to definitions which would include practically all inanimate objects in the universe (e.g. "They all come out of the ground"). Utilising this modification of Rapaport's method of scoring, it was shown that a score of above 6 correlated significantly with the

presence of this type of thinking in schizophrenics and a score of 6 or less with its absence. Also it was shown that 10% of a control group of normals scored above 6. It is considered that this study provided objective evidence for the author's observation that a specific type of thinking, similar to that described by Bleuler and Skottowe, is found in a high percentage of schizophrenics and a smaller percentage of normals.

The question then arises, what determines the presence of this type of thinking in a particular individual, if it is not due to a schizophrenic illness? It has already been advanced that it is due to a weakness of inhibition at the level of what Pavlov termed the higher nervous activity. He considered such variations in the strength of excitation and inhibition in dogs were determined constitutionally. This is also the conclusion the author came to from observing the parents of patients and normals with this type of thinking. In all cases, at least one parent showed this type of thinking. To put this observation on a more objective basis the parents of schizophrenic patients with thought disorder were tested with the Object Sorting Test. In every case at least one obtained a score of above 6 on the test, indicating the presence of this type of thinking (9).

If one is to consider the hypothesis that this type of thinking is found in about 10% of normals and is inherited in dominant fashion, further problems must be considered. Firstly, why does it occur in a much higher percentage of patients diagnosed as suffering from schizophrenia? It is considered that it acts as, or indicates the presence of, a predisposition to this illness. Why then does this hereditary predisposition to a severe and often chronic illness affecting people early in the pre-creative period of their lives, not die out? One reason is that obviously only a small percentage of people who show this type of thinking actually develop schizophrenia.

In addition the author has been led to conclude that such thinking conveys advantages to its possessors since they so frequently demonstrate great ability in certain occupations. That it is particularly of value to artists is fairly obvious. People

who show it introduce into their thinking associations, the relevance or logic of which is only partially, if at all, immediately apparent to people without it. To choose a gross example, the ability to see people as birds or as other emotive or comical figures is plainly of great value to the cartoonist, and the schizophrenic nature of much verbal humour—the partial irrelevance and partial relevance of such a transposition as “the all leather Goon Show”—is widely recognised. A more subtle but no less real advantage is given to the serious visual artist—the ability to see in certain shapes relationships of emotional significance which the rest of us would reject preconsciously as not relevant until actually faced with them. The gifted writer who is prevented by this condition from being fully aware of the logical grounds on which people act, is sensitised to the emotional ones and can depict a world of people acting on strange impulses which is clearly of sufficient, even if partial, truth to provide a powerful experience for his readers: D. H. Lawrence is a perfect if a somewhat extreme example.

However, in the intellectual sphere there is also profit to be had from this type of thinking. The learning of entirely new modes of thinking—as in mathematics and electronics—is apparently made easier, to judge by the success in these fields of people with this type of thinking. The reality of $\sqrt{-1}$ or the acceptance that a particle can also be a wave must be less of a problem to people not restricted by inexorable logic. As well as its aid to creativity which can obviously apply only to a few, this condition also increases its possessor's ability to appreciate and profit by innovations of all sorts. These persons, therefore, encourage progress not only in the arts but also in business, and are often found making a success of what seemed initially a very odd idea. Probably their most obvious characteristic and perhaps their greatest attribute is their tendency in every-day life to be more sensitised to, and aware of, the emotional side of the behaviour of others, to be intuitive rather than deductive, and if this often leads them into falsity and exaggeration, inpeccable logic, for all its greater social acceptability, can do likewise. For it is considered by the author

that this in extreme form also exists as a special type of thinking which can equally distort reality yet equally throw light on certain of its aspects.

It was considered that the type of thinking already discussed was due to a weakness of inhibition. What would result if inhibition were extremely strong? Once a series of ideas were logically connected they would tend to inhibit the rest of the associations and so be less likely to be affected by implications to the contrary. The author has noted thinking of this sort in patients with paranoid forms of illness and again been led to notice the same thinking in normals.

When a paranoid patient informs you of his delusional beliefs, every nuance in the behaviour of others, every minor change in his environment, which would be dismissed as coincidental by others, but which can be logically related to his beliefs by the patient, is recounted in remorseless detail. One feels a growing irritation with this terribly prolonged account of unimportant incidents which, to the patient, are proof positive of his beliefs. If then one goes to a committee meeting one may feel the same sense of irritation as one of its members puts forward with unanswerable logic some prolonged argument such as that if a particular step is taken it may establish a precedent which may permit various undesirable consequences. Considerations of expediency are ignored by him and long after he realises he has lost the sympathy of the committee, he feels impelled by his conviction of the rectitude of his case to continue to argue it. A “bush-lawyer” is the local expression for such individuals. They inevitably feel resentful and misunderstood, unable to grasp why their perfectly argued case does not win universal acceptance. The author considers that here we are again dealing with an inherited type of thinking, predisposing the recipients to a paranoid psychosis. It is suggested that the delusions of persecution so common in this latter condition are a logical development from the constant reaction of annoyance such persons produce in others. That is, this type of thinking is the primary disturbance in paranoia, not unacceptable feelings of love, which are “reversed” into feelings of hatred

and "projected" on to the environment as was suggested by Freud(1). This type of thinking gives advantages to the possessor enabling him both to analyse events in detail and to build up logical theories to account for his observations. Of course these theories may end as vast superstructures on fairly slender foundations, but as they are internally consistent they are held with great tenacity by their author and often win wide acceptance. It would seem that Freudian theory is itself such a construction, and has often been criticised as such. Unfortunately this has not prevented some of its critics from developing equally substantial psychological theories on equally slight observations.

It is interesting to note the extent to which writers have been aware of these differences in people. The Broadway writers of comedy in particular have been fascinated by the scatter-brained, logically deficient woman and revelled in the triumph of her sound, though apparently "zany," intuitions over what seems to appear to them a hard-hearted and hard-headed society with no time for frivolity: "Auntie Mame" and "The Solid Gold Cadillac" being two examples. A more sensitive portrayal of a person with schizophrenic thinking is that of Mrs. Moore in E. M. Forster's *A Passage to India*. In this novel two of her children are depicted as sharing her intuitive, sensitive nature and rather incoherent speech, while the third child is a clear-thinking realist, an indication of the author's awareness of the familial nature of the condition. Perhaps the most brilliant exposition of the paranoid thinker is in *Othello*. The inability of the hero to reject his belief that Desdemona's loss of the handkerchief is proof of her infidelity once this idea is incorporated into his logical system is one of Shakespeare's many brilliant insights. In my experience with paranoid patients it has been paralleled again and again by the significance one has attached to the shifting of the fluid level in a bottle of poison, another to the crushed appearance of his wife's bed-covering, and so on. Once again the observations have been made by the artist long in advance of the psychiatrist.

In summary, it is suggested that all persons' thinking is not identical. Two extreme modes of thinking are described. In the first, the ability of the mind to exclude logically irrelevant associations is weakened so that thought processes are vaguer and more dominated by intuition. In the second, the ability of the mind to give a logical meaning to environmental events is strengthened, so that once such a meaning is found, it is held with greater tenacity, while opposing considerations have less influence, resulting in a triumph of logic over common-sense. Evidence is advanced that the first type of thinking affects about 10% of the population, acts as, or indicates the presence of, a predisposition to schizophrenia and is inherited in dominant fashion. It is the author's impression that the second type of thinking acts as a predisposition to paranoid psychoses and a possible mechanism is suggested. It is further suggested that these types of thinking could result respectively from a weak and a very strong process of inhibition in the higher nervous activity, to use Pavlov's theory of mental function.

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SOCIOPSYCHOLOGICAL CHARACTERISTICS OF RESIDENT PSYCHIATRISTS AND THEIR USE OF DRUG THERAPY¹

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INTRODUCTION

Why do some psychiatrists prescribe drug therapy for their patients more than do others? The answers to this question form part of the larger problem of understanding the process of decision-making in psychiatric treatment. The factors involved in any treatment decision are many: the psychopathology being treated, social background of the patient, the treatment setting, the treatment goals, alternative treatments available, and the orientation and personality of the psychiatrist.* In recent years, excellent studies have clarified our understanding of a number of these factors. For example, Hollingshead and Redlich have demonstrated that the patient's social class is frequently a significant determinant of the form of psychiatric treatment he receives(1). Other studies have directed attention to the importance of the social characteristics of the treatment setting(2). It would appear, however, that even with similar patients and in comparable settings, psychiatrists differ in their propensity to utilize the currently available therapies.

There is now a small, but growing, literature on the personal feelings and values of the psychiatrist relating to his use of different therapies. Studies, mainly by psy-

chiatrists and social scientists, have shown that the more the psychiatrist is oriented towards psychotherapy and the greater is his commitment to a psychodynamic theoretical approach, the less likely he is to use the somatic therapies(3, 4, 5). Others, primarily psychoanalysts and dynamically-oriented psychiatrists, have suggested that in prescribing the somatic therapies, the psychiatrist is inappropriately applying the traditional medical role-model to psychiatry (6, 7, 8). In addition, irrational feelings, especially punitive motives and authoritarian trends, have been ascribed to the psychiatrist who prescribes these treatments.

While interpretations of this kind were originally applied to psychiatrists advocating psychosurgery and the shock therapies, they have recently been carried over to the users of the new psychopharmacologic agents. For example, Szasz, in discussing drug treatment, equates the tranquilizing drugs with restraint, regarding them as "chemical strait jackets"(8). He argues that they remove from the psychiatrist the guilt and remorse which served as moral safeguards when he used the older and cruder forms of physical restraint. Szasz further states that drug treatment benefits the family and others around the patient, rather than being, as is usually claimed, primarily for the patient's own welfare. This point of view is also shared by Meerloo who has compared drug therapy to "brainwashing"(9).

It is worth noting that these observers actually employ only one edge of the psychodynamic sword. They postulate irrational emotions on the part of psychiatrists who use drug therapy. However, these same motivational concepts could be applied to analyze the possible role of irrational factors in the non-use of drug therapy by other psychiatrists.

This is a study of the use of drug therapy in a teaching hospital where the psychia-

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trists were found to differ considerably in their use of drug therapy. The aims of the study were: (a) to develop measures of the differential use of drug therapy by psychiatrists; (b) to determine the possible relationship between the psychiatrist's use of drug therapy and his personality characteristics, especially authoritarianism and related trends; and (c) to consider the possible ways in which irrational motives and feelings may be involved in low, as well as high, use of drug therapy.

RESEARCH SETTING AND PROCEDURE

The study was conducted on the adult inpatient services of the Massachusetts Mental Health Center (formerly, the Boston Psychopathic Hospital), a small state hospital affiliated with the Harvard Medical School. The hospital specializes in short-term intensive treatment and is also well known as a training and research center (10). Its daily inpatient census expanded during the period of this study from 120 to 170 patients. The admission rate varies between 600 and 900 patients a year. Over 85% of the admitted patients were discharged to the community, the remainder being transferred to other institutions. The mean duration of hospitalization was 8.2 weeks. The hospital treatment program emphasizes individual and group psychotherapy. More than half of the patients receive psychotherapy. The treatment of adult inpatients is carried on predominantly by the resident psychiatrists under the supervision of staff psychiatrists, many of whom are members of the Boston Psychoanalytic Society.

The study was carried out during a recent academic year, during which approximately 35% of all admissions received drug therapy, either briefly or intensively, often in conjunction with other treatments, usually psychotherapy. Of those who received drug therapy, approximately one-half were given drugs within the first week of hospitalization. The mean duration of drug prescription was 6.3 weeks.

Our sample consists of 12 resident psychiatrists in the first year of their training. They constitute the entire group of residents assigned to the inpatient adult services during the year of this study. Almost all the resident psychiatrists were interested

in learning psychodynamics and practicing psychotherapy, although they varied in the strength of their commitment to psychotherapy and in the range of their other professional interests(11). The residents were given a number of sociopsychological tests and were interviewed several times during the year regarding their hospital experiences and their attitudes toward various forms of treatment.

THE MEASUREMENT OF DRUG USAGE

As stated previously, 35% of the patients received drug therapy at some time during their hospitalization. While there are few published reports of rates of drug use in hospital settings(12, 13), it is our impression that this represents a moderate degree of drug usage. From the information available to us, both from the literature and from informal sources, the rate of drug therapy at this hospital appears to be lower than on the admission services of most public mental hospitals while higher than in private psychiatric hospitals or university training centers. The overall percentage of patients receiving drug therapy at this hospital has remained relatively stable in recent years. However, the individual psychiatrists have varied considerably in the extent to which they have prescribed drugs. Our first problem was to develop a valid index of a psychiatrist's use of drug therapy.

In developing this index, we were cognizant of the interaction between the individual psychiatrist's own inclinations and the influences, both overt and covert, upon him from the hospital milieu. The decision to prescribe drug therapy for a patient in the hospital setting is the result of complex social forces and group processes(14). In contrast to his colleagues in private practice, the hospital psychiatrist often has to accommodate his theoretical persuasions and treatment orientations to the hospital's administrative needs. In addition to the psychiatrist's preferences, the needs and wishes of other staff members influence treatment decisions. Frequently, when drugs are prescribed, the initiative in the prescription comes from staff members other than the psychiatrists. In these situations, drug therapy, prescribed for only short periods, is being used for the temporary relief of severe

symptoms, the management of intercurrent ward crises or the resolution of temporary impasses in psychotherapy. In these instances, drug therapy is an ancillary rather than primary treatment. While no index of drug usage can be completely independent of these milieu influences, we attempted to derive an index which would be a valid and sensitive measure of the psychiatrist's use of drug therapy as a sustained treatment procedure.

Information on the use of drugs was obtained by reviewing the hospital experience of all patients admitted during the period of study. We surveyed the case records and ward charts of all patients admitted to the hospital during an 11-month period from July 1 to the following June 1. For each patient admitted, we ascertained the resident psychiatrist responsible for his treatment and the duration, in weeks, of hospitalization. For those patients receiving drug therapy, we ascertained the interval between admission and the start of drug therapy, and its duration.

The index used as the measure of each psychiatrist's prescription of drug therapy denotes the percent of the total hospitalization time that his patients were receiving drug therapy. This index was obtained by dividing the number of weeks the resident's patients were on drugs by the total weeks all of his patients were hospitalized. This index was derived for each psychiatrist. The lowest index obtained was 15%, indicating that this psychiatrist's patients, taken as a group, received drug therapy during 15% of their total weeks of hospitalization. The highest value was 52%. The mean value for the group of 12 residents was 28%. This index was considered to reflect the resident's utilization of drug therapy as a sustained and enduring form of treatment.

We tested a number of different indices; for example, the percentage of patients a psychiatrist started on drug therapy during the first week of hospitalization, and the average duration of drug therapy. However, the index described above proved the most useful. It is beyond the scope of this paper to present the data on indices of drug use and the inter-correlations among the different indices. It is worth noting that

the indices differed in their correlations with the sociopsychological measures. The derivation of valid indices of drug usage remains an important research problem.

DRUG USAGE AND AUTHORITARIANISM

In the studies referred to earlier, various investigators hypothesized that the propensity to use drug therapy reflected aspects of the psychiatrist's authoritarianism. In our attempt to test this hypothesis, we employed the F Scale as a measure of authoritarianism (15). This scale contains a number of statements concerning authority, work, sex, aggression and human nature. Typical items are, "People can be divided into two distinct classes: the weak and the strong," and "Sex crimes, such as rape and attack on children, deserve more than mere imprisonment; such criminals ought to be whipped in public or worse." High scores have been shown to indicate a variety of authoritarian trends, including punitiveness and alienation from one's inner life. In recent years, this scale has been used in psychiatric settings and the scores of staff members have been found to relate to various aspects of hospital functioning (16). Furthermore, patients' F scores have been shown to be predictive of the type of treatment they receive; patients with higher F scores tend to receive ECT, while psychotherapy is more often given to patients with lower F scores (17, 18).

The scores on this scale have a possible range from 10 to 70 points with a midpoint of 40. The mean F score in our sample was 24; the range was 11 to 36. It is of special note that the highest F score did not reach the midpoint of the scale. Thus, as a group, the resident psychiatrists were strongly non-authoritarian. Their mean was very much lower, *i.e.* less authoritarian, than that of a sample of surgical residents (19), but comparable to the means found in previous studies of other psychiatrists in America (16) and in Britain (20). Within this restricted range, from very low to moderately low F scores, was there any relationship between authoritarianism and drug use? As shown in Table I, the F Scale scores did correlate highly with the index of drug use. The F Scale correlated 0.66 with the index of drug usage. This correlation indicated

TABLE 1

CORRELATIONS BETWEEN PSYCHIATRISTS' USE OF DRUG THERAPY
AND THEIR SCORES ON SOCIOPSYCHOLOGICAL MEASURES*

Index of Drug Use	Sociopsychological Measures			
	F Scale	S Cluster	C Cluster	A Cluster
Percentage of their total hospitalization time during which the psychiatrist's patients were on drug therapy	.66**	.60**	.60**	.51**

* Spearman rank-correlation co-efficient (Rs). Source: Siegel, S., *Nonparametric Statistics for the Behavioral Sciences*. New York: McGraw Hill Book Company, Inc., 1956.

** Statistically significant. Critical values for sample size of twelve are 0.506 ($p = 0.05$) and 0.712 ($p = 0.01$).

that the higher a psychiatrist's score on the F Scale, the more likely were his patients to receive drug therapy during their hospitalization.

Further data bearing on the relationship of these personality trends to drug use were obtained from a newly developed Values Inventory (21), which was administered to the psychiatrists independently of the other tests. This Values Inventory contains 146 statements dealing with personal feelings and interpersonal relations. The statements are grouped into 8 clusters, 3 of which were found to relate to drug usage.

The S Cluster deals with issues of status and social hierarchies. A high score indicates high value on manifest status differences and on leader-follower relationships. An example is "There should be a definite hierarchy in an organization with definite duties for everyone."

The C Cluster deals with character and honor. A high score on this cluster indicates strong value on the exercise of strict self-control, the maintenance of honor, and a sense of duty. An item is "The higher type of person makes a sense of duty the groundwork of his character."

The A Cluster deals with assertiveness and aggression. A high score on this scale indicates strong value on dealing with problems in an active, outspoken, decisive fashion even if the feelings of others are hurt. An example is "I feel like criticizing someone publicly if he deserves it."

Few of the resident psychiatrists scored high on any of these three clusters; most of the scores were moderate to low. Thus, as

a group, they did not value the assertive behavior, hierarchical status differences or ideas of duty measured by these three clusters. However, the range of scores on these clusters was wider than on the F Scale. As shown in Table 1, these three Value Clusters correlated significantly with the index of drug usage. These correlations indicate that the psychiatrists who use drug therapy frequently tend to value assertive and decisive behavior more than their colleagues who use drug therapy to a lesser extent. They also place relatively greater value upon manifest status differences, sense of duty, and self-control than the psychiatrists who are low drug users.

DISCUSSION

Our findings can be briefly summarized. The sample of psychiatrists, as a group, show a limited range—from moderate to low—with regard to both their use of drugs and their scores on measures of authoritarianism and related values. Within this range, we found that, as their use of drug therapy increases, so also did the psychiatrists' scores on the F Scale and on the 3 related Values Clusters. Stated otherwise, we have evidence of 2 treatment-personality patterns: first, what we shall call the "low" pattern, psychiatrists with very low scores on drug usage and authoritarianism; and, second, the "middle" pattern, psychiatrists with moderate scores on both sets of measures.

Although our sample showed only this restricted range, a possible third pattern

should also be considered—the “high” pattern, psychiatrists with relatively high rates of drug use associated with high scores on measures of authoritarianism. We have the impression that this “high” pattern would rarely be seen in most residency training centers, but might be found in more diverse psychiatric settings.

How can we best understand these two patterns? Let us first consider the “middle” pattern. On the basis of their scores on the sociopsychological tests and information derived from participant observation and interviews, we have constructed the following summary of the treatment orientation and value preferences of the psychiatrists in the “middle” group.

The psychiatrists in this “middle” group, to a greater extent than their colleagues in the “low” group, value assertiveness, self-control, and forceful leadership. Holding these values, they are willing to assume a moderate degree of authority and to exercise their medical responsibility in treating and caring for their patients. They consider it their obligation as physicians to use every reasonable means to promote symptom-reduction, to relieve the patient's distress, and to maintain a relatively stable ward atmosphere. Their moderate, rather than low, rate of drug usage is consistent with this orientation.

To what extent are irrational feelings and motives involved in the behavior of these psychiatrists? The fact that they earned higher F scores than the “lows” might be interpreted as supporting the view expressed in the literature cited earlier; namely, that their propensity to use somatic treatments is a reflection of punitiveness and related authoritarian qualities. Their more traditional definition of their medical role, as the doctor who works on, rather than exclusively with, his patients, could be regarded as another expression of moderate authoritarian tendencies. It could also be hypothesized that their use of drugs is motivated not merely by a wish to help their patients, but also by some defensive need to control patients' impulsive or disturbed behavior which the psychiatrists themselves find threatening.

However, this interpretation is based upon two assumptions: first, that moderate

drug use in itself reflects the punitiveness, the defensiveness and the nondynamic approach to patient care alleged to be present in psychiatrists who use drugs and other somatic therapies to a great extent; and second, that their range of scores on the F Scale represents to only a lesser degree the same pattern of personality dynamics demonstrated for high F scorers (15). It can be argued, however, that neither of these assumptions is valid. It is possible that the psychiatrists in the “middle” pattern are using drugs flexibly and with consideration of their patients' varied needs; that is, in a nonpunitive and nondefensive manner. Similarly, their middle range of F scores may not represent only quantitatively less authoritarianism but rather may involve the operation of qualitatively different personality trends involving such features as the willingness to accept responsibility and the capacity to set limits on deviant behavior.

Let us now examine the “low” pattern in a similar manner. The “low” psychiatrists are more opposed than their “middle” colleagues to status hierarchies and to assertive behavior, especially when such behavior might be violating the feelings of others. Believing in these values, they prefer psychological treatments which maximize the patient's role as an active participant in his own treatment. The “low” psychiatrists see a conflict between the traditional medical role, with its emphasis of taking responsibility and active intervention, and their concept of the psychiatrist's role as primarily that of the psychotherapist. Their limited drug use is consistent with these values; values also expressed, explicitly or implicitly, in the writings of Szasz, Meerloo and others who are critical of the use of somatic therapies in psychiatry.

However, the same question can be asked of the psychiatrists in the “low” pattern as was previously asked of the “middle” pattern: To what extent are irrational feelings and motives involved in their attitudes and behavior? It may be argued that irrational forces are operating when they delay or avoid prescribing drug therapy for patients who might benefit thereby. From the results of previous studies of low F scores, it could also be inferred that the inhibition of aggression as well as strong identification with

the underdog may be features of their personalities. Psychiatrists with these tendencies may disapprove of drug therapy from an irrational fear that this would punish or limit their patients. Possibly, these tendencies reflect a confusion of authoritarianism with authoritativeness. The high value placed by them on psychological modes of treatment may also be accompanied by insecurity about their own psychotherapeutic skills. In this insecure position, they may perceive the use of drugs as an indication of the failure of their psychotherapeutic efforts. We observed that their aversion to acting in an assertive or directive manner was laden with emotion, indicating that this was an area of conflict for them. It may be that these concerns relate to their resistance to accepting the learning of techniques in drug therapy as a part of their psychiatric skills.

Thus, the findings of this study relating to the psychological meaning of the "low" and "middle" patterns of drug use can be interpreted in different ways. Further research may demonstrate that irrational forces play a larger role in the decision-making behavior of the psychiatrists committed to one of these two treatment orientations. However, our own feeling, as yet untested, is that neither group has a premium on rationality. Within both groups, there probably are wide differences in the degree to which treatment-decisions reflect defensive needs of the therapist rather than therapeutic needs of the patient.

Further research in this area should, we believe, include even more intensive clinical and interview material than we utilized in this study. It might be particularly fruitful to explore the clinical course of patients about whose treatment there were marked differences of professional opinion. In these situations, we would predict that the psychiatrists holding "low" pattern of values would limit their use of drugs more than would the psychiatrists who exemplify the "middle" pattern. The intensive investigation of these "problematic" instances would, we hypothesize, reveal that the "lows," in deciding against drug therapy, do so partly from the fear of being punitive or assertive, and that the "middles" in prescribing drugs are motivated partly by the wish to control

or punish anxiety-provoking behavior. In addition to specific personality vulnerabilities and characteristic therapeutic blind-spots, the two groups also have different types of professional assets and personal satisfactions. Thus, we predict that the "middles," more than the "lows," would experience the satisfaction of acting in an authoritative—but not necessarily punitive—manner when confronted with difficult clinical situations or ward management problems. Correspondingly, the "lows" more often would feel gratified in helping patients to master their conflicts and anxieties without the need of external controls such as drugs. Similar differences in sources of professional justification were found in a survey of psychiatric practitioners (4).

The question may well be asked: Of what value is it to know about feeling and motives of psychiatrists related to their choice of a particular treatment? It may be hypothesized that the greater the admixture of irrationality in the treatment decision, the less likely is the treatment to be effective. However, there is no simple relationship between the motives of the psychiatrist in prescribing a treatment and its subsequent efficacy. It is possible for a psychiatrist to reach the "right" decision for "wrong" reasons and the "wrong" decision for the "right" reasons. Moreover, the "right" and "wrong" of treatment decisions are difficult to establish. Wide differences of opinion currently exist among psychiatrists as to the indications for drug therapy and there are few criteria for determining when a particular drug prescription is appropriate or inappropriate. Nor are there standards for judging whether a psychiatrist's use of drug therapy is excessive or reasonable. The absence of such criteria contributes to the phillipics and unconstructive arguments that currently pass between the advocates of different psychiatric therapies. In these arguments, discussion and criticism too easily become polemics. The undesirable attributes of the extreme advocates of one treatment are ascribed to moderate users, which provokes the criticized psychiatrists to counter with attacks on their critics' motives and personalities.

We believe that the psychiatrist's personality is an important determinant of his

treatment decisions. As such, it is an important area for research, quite apart from the question of how much his personality accounts for the efficacy of drug treatment. Among other contributions, such research would help to clarify the nature of psychiatrists' resistance to using certain treatment methods.

However, the controversial nature of this subject requires that the investigator avoid polemics and be open-minded to the assets, as well as the liabilities, of psychiatrists specializing in different treatments. A broad sociopsychological framework is also necessary to deal with the interplay of individual personality and social processes. In spite of these difficulties, research on these problems would seem particularly relevant to the complex problems currently encountered in the mental health field. •

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HAZARDS OF DRUG EVALUATION : TRIALS OF 84 NON-APPROVED DRUGS

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Neuropsychiatry, like other areas of medical practice, is fortunately faced with an increasing number of potentially beneficial new medications. The magnitude of this increase is shown by the 2,500 papers published between 1952 and 1957 on psychopharmacology(1).

Since the encouraging results observed during the testing of a new drug in animals cannot be routinely duplicated in the patient, the determination of the effectiveness of an untried medication ultimately depends on clinical evaluation. This report is based on the clinical evaluation of 84 drugs prior to their approval by the Food and Drug Administration.

In addition to the possible toxicity of unproven drugs, other formidable factors influence their clinical evaluation: 1. The geographic isolation of the institutions which house chronic patients from medical centers, 2. The lack of status of this type of research, 3. A lack of interest in drug treatment by psychiatrists in the "analytic-psychological" type of practice, and 4. The source of the new compounds to be tested.

TOXICITY OF THE DRUGS TESTED

Between July 1955 and July 1959, a total of 93 different drugs were evaluated in two Nebraska state hospitals and the Nebraska Psychiatric Institute.³ Of these, 84 had not yet been approved by the Food and Drug Administration. These 93 drugs were administered to 1,704 patients, approximately a quarter of whom participated in more than one study.

Two deaths occurred in these groups during the 4 years' study. One, a 67-year-old male, apparently suffered a coronary occlusion during a trial of a phenothiazine derivative; and the second, an 88-year-old female, died while receiving a cholesterol

lowering compound which she had tolerated previously without difficulty. Neither death was related to the drug, nor were similar incidents reported by other investigators using the same compound in similar types of patients.

Reversible side effects were frequently seen, particularly with the phenothiazine derivatives at higher doses. In these evaluations it was necessary to determine the therapeutic and toxic dose as well as whether the product was effective.

To assure close observation of the patients, research units, consisting of one or more psychiatric nurses, a technician and a secretary, were established in the state hospitals. These personnel had no service function, and their responsibility was entirely to the research department, which permitted close observation of the patients in the various projects. Any side effects observed were immediately reported to a staff physician in the institution. Routine laboratory studies were done each week.

It would appear from this experience with 93 drugs in 1,704 patients that if those receiving new medications are closely observed and the medical care is adequate, the testing of new drugs certainly does not entail undue hazards.

OTHER PROBLEMS IN DRUG EVALUATION

The isolation of chronic patients from medical centers: Those for whom more effective treatment is most needed are frequently located in medically and geographically isolated hospitals. They are also the patients who are most available for drug studies. On the other hand, university medical centers with their concentrations of research personnel are located in metropolitan areas; and little or no connection may exist between these medical centers and the state hospitals.

Lack of status of this type of research: Another difficulty that retards the clinical evaluation of drugs results from the nature of this sort of research. It is not a very inspirational type of endeavor. Essentially,

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³ Several of these projects were supported by a grant from the National Institutes of Mental Health.

the psychiatrist is merely testing someone else's ideas, and this is not in keeping with the concept that "senior investigators" hold of their function.

Drug research is made even less inspirational by the routine that repeated evaluation requires, and the need to prevent the contamination of the results by an investigator's enthusiasm. The lack of originality required in planning such efforts, the frequency of negative results, and the lower status of this type of research offer little motivation for clinical investigators.

Lack of interest in drug treatment and drug research in some types of psychiatric practice: One problem in doing drug research results from a peculiarity* of the present day practice of psychiatry. This problem was well illustrated in a study of patterns followed in neuropsychiatric practice by Maciver and Redlich(2).

These authors interviewed 40 psychiatrists and found that two rather distinct types of psychiatry were practiced in this country; one type was termed "analytic-psychological" the other "directive-organic." Those in the "analytic-psychological" group rely almost entirely on psychological and non-directive methods in their therapy. An emphasis on understanding the patient's thinking and his personality was seen as the goal of practice by the "analytic-psychological" group. This could ordinarily be accomplished without the benefit of drug therapy.

It was noted that all the university psychiatrists interviewed were in the "analytic-psychological" type of practice. When questioned about organic therapies those of this persuasion replied: "I've no experience with them," "I know little about them; I'm skeptical of the efficacy," and "They're used more than justified."

The other type of psychiatrist described as "directive-organic" in his orientation was much more enthusiastic about somatic methods of treatment. These psychiatrists were most rewarded by seeing the patient progress, relieving his symptoms and curing him. None of this group was a university psychiatrist.

The source of new compounds to be

tested: The production of medications for the treatment of the mentally ill, during the past few years, has enhanced the clinician's dependence on pharmaceutical firms for new compounds and information. This trend has disturbed both physicians and non-medical groups.

However, until medical schools or university research centers become the source of more effective compounds, the trend will probably continue and increase. The physician prescribing a medication seldom ponders whether the research biochemist, who originated the idea which lead to its development, was on the staff of a university or a pharmaceutical firm. His primary interest is in the effectiveness of the compound rather than the atmosphere in which it was conceived.

As disturbing as this trend to depend on the maker of the product for information may be, it would be much more disturbing if these research efforts to develop more effective compounds ceased. The dramatic, expensive and occasionally exaggerated advertisements which seek to inform and influence the clinician are perhaps of more value to the journal in which they appear than to the potential reader.

CONCLUSIONS

1. If sufficient medical care is provided, compounds on which adequate animal toxicity studies have been done, do not appear to involve hazards in clinical trials. This conclusion is based on 93 drugs evaluated over a 4-year period in 1,704 patients; 84 of these drugs had not been approved by the Food and Drug Administration.

2. Other factors which tend to delay drug evaluation efforts include: the isolation of the chronically mentally ill from medical research centers, the lack of status associated with this type of research, the peculiarities of psychiatric practice and the source of the new compounds available for evaluation.

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THE RELATIONSHIP OF MENTAL AND PHYSICAL STATUS IN INSTITUTIONALIZED AGED PERSONS

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Large numbers of aged persons reside in homes for the aged, nursing homes, and psychiatric hospitals. Each type of institution ostensibly offers special services in response to specific needs. Thus, the old age home is considered to offer social aids, the nursing home medical assistance, and the mental hospital psychiatric care. This concept of specificity of service implies that the needs of the aged are also specific, that they can be categorized as chiefly in need of social, psychiatric, or general medical assistance.

The purpose of this report is to examine the validity of the concept of need specificity in regard to psychiatric and medical care. Data for this were made available by the direct examination of the mental and physical characteristics of a group of aged persons randomly selected from the 3 types of institutions. This population is part of a larger institutionalized group of aged persons studied and reported elsewhere⁽¹⁾.

METHOD

Population: Persons residing in nursing homes, homes for the aged and state mental hospitals located in New York City who were 65 years of age or over at the time of first admission to the institution, were sampled and examined within a 30-day period.²

¹ From the Office of the Consultant on Services for the Aged, New York State Department of Mental Hygiene, Queens Village, N. Y., Alvin I. Goldfarb, M.D., Consultant. This is an expanded version of the paper read at the Eleventh Annual Meeting of the Gerontological Society, Inc., Philadelphia, Pa., Nov. 6, 1958.

² The old age homes in New York City are non-profit institutions which are usually members of sectarian federations of social agencies. The State Department of Social Welfare supervises old age homes in New York City. The nursing homes are commercial institutions, licensed by the New York City Department of Hospitals, and the City Department of Welfare pays for the care of many persons in them. The state hospitals are public psychiatric hospitals for the care of the mentally ill maintained and administered by the state through the Department of Mental Hygiene.

The entire survey was completed in the period February–October, 1958.³

The institutions as well as the persons tested within each institution were selected by random sampling. The 3 state hospitals in New York City were sampled, with the total of 200 patients examined drawn entirely from those admitted within 2 years preceding the survey month. Four hundred twenty-five persons in 13 of the 102 proprietary nursing homes registered by the Department of Hospitals in January 3, 1956, and 506 persons in 9 of the 49 homes for the aged listed by the Community Council of New York City in 1957 were examined.

Procedure: Each subject was examined by a physician and tested by a psychologist. The mental and physical examinations were completed within 30 days of each other. The physician's examination and the brief medical history he obtained were used to evaluate the subject's physical functional status. This was categorized in terms of 3 grades of physical capacity as follows:⁴

Grade A. Unrestricted or moderately restricted physical capacity: individuals who can take care of their own needs or who may need a small or moderate amount of supervision and assistance. Persons with unrestricted physical capacity can live alone, travel alone, and take care of their home needs. Moderately restricted activity is often occasioned, for example, by heart failure or osteoarthritis which is severe but does not confine the patient to bed, poor eyesight, amputation, malnutrition, and debilitation in association with slow growing malignant neoplasms or blood dyscrasia.

Grade B. Restricted activity—marked: individuals who require frequent help and cannot live alone. They are persons with moderate to marked infirmity, associated with

³ Sampling was planned and supervised by J. A. Jahn, Ph.D. Research activities were coordinated by Helen Turner, M.S., with assistance of Syra R. Cohen, B.S.

⁴ The rating scheme was suggested by the work of F. D. Zeman, M.D.: *J. Mt. Sinai Hosp.*, 14: 3, 721, Sept./Oct. 1947.

advanced age or the presence of disease which severely limits physical ability. Examples are Parkinson's disease, paralysis, severe osteoarthritis, advanced peripheral vascular disease, malnutrition, and debility due to neoplasm.

Grade C. Restricted activity—complete: individuals who cannot function and survive in the absence of constant help given by a devoted family member or attendant. They may be totally bedridden and require complete nursing care. They have advanced infirmity with great limitation of mobility and complete dependence upon crutches, wheelchair, or cane as is frequent with advanced Parkinsonism, cerebro-vascular thrombosis and with advanced debilitation of malignant disease or "senility."

The psychologist's examination to determine mental status consisted of a special questionnaire and the face-hand test of Bender(2).

The special questionnaire was a series of 10 questions imbedded within a larger standardized series of 31 questions similar to the usual psychiatric examination of sensorium. The 10 questions selected from the longer list and used in this study for the quantitative determination of mental status, are as follows: 1. What is the name of this place? 2. Where is it? 3. What is today's date? 4. Month? 5. Year? 6. How old are you? 7. When were you born? (Month) 8. When were you born? (Year) 9. Who is President of the United States? 10. Who was the President before him?

The response to each of the questions was scored as right or wrong. In the analysis of data each subject was placed in one of 3 groups according to the number of errors made in response to the Mental Status Questionnaire "special ten." The 3 groups consisted of persons making 0-2 errors, 3-8 errors, and 9 or 10 errors and are here considered to differentiate between degree of severity of chronic brain syndrome, none or minimal, moderate, and severe.

The second test of mental status, the face-hand test, was used as described by Bender and his associates(2), who have demonstrated that it is a reliable test of brain disease. It consists of rating the person's ability to perceive two simultaneously applied tactile stimuli, one to the cheek and the other to the dorsum of the hand. The

test includes a series of double simultaneous stimuli in different combinations of right and left, and of cheek and hand, each of which is repeated twice, making a minimum of 10 such applications of stimuli in all. The test is done first with the subject's eyes closed and, if positive, is repeated with the subject's eyes open to determine whether opportunity to watch the application of the touch stimuli improves his performance.

In this study the test was considered positive only after the person had ample opportunity to learn that response to two simultaneous stimuli was expected, and with eyes open continued to make errors. A positive test is considered indicative of impaired mental functional status.

RESULTS

Physical Status and MSQ Score by Type of Institution: The physical and mental status of individuals as evaluated and rated appeared to parallel each other in all 3 types of institution (Table 1). In homes for the aged, 67% of persons making 0-2 MSQ errors were rated as in relatively good phy-

TABLE 1

RELATION OF MENTAL AND PHYSICAL FUNCTIONAL STATUS IN EACH TYPE OF INSTITUTION

Physical Functional Rating

MSQ Scores	A		B		C	
	N	%	N	%	N	%
<i>Homes for Aged</i>						
0-2 (216)	144	67	59	27	13	6
3-8 (172)	91	53	65	38	16	9
9-10 (118)	22	19	57	48	39	33
Total (506)	257	51	181	36	68	13
	Chi ² =89.15 df=4 p<.001					
<i>Nursing Homes</i>						
0-2 (90)	26	29	31	34	33	37
3-8 (153)	47	31	55	36	51	33
9-10 (182)	17	9	65	36	100	55
Total (425)	90	21	151	36	184	43
	Chi ² =31.23 df=4 p<.001					
<i>State Hospitals</i>						
0-2 (20)	10	50	6	30	4	20
3-8 (54)	23	43	20	37	11	20
9-10 (126)	21	17	49	39	56	44
Total (200)	54	27	75	38	71	36
	Chi ² =21.79 df=4 p<.001					

sical functional status (A) while only 6% were given poor physical ratings (C) and 27% were rated moderately (B). In contrast, of those making 9-10 MSQ errors, only 19% were of good physical status and 33% were rated poorly. Persons making 3-8 MSQ errors fell between the other two groups with respect to physical status.

Although as a group, the persons in nursing homes were in poorer physical and mental condition than the residents of homes for the aged, nursing home residents making the most MSQ errors were still most often in poor physical condition; only 9% of those with 9-10 errors were rated as A and 55% as C. There was little difference in the physical rating between those who made 0-2 and 3-8 MSQ errors, but both of these groups were rated as having considerably better physical status than the group which made 9-10 MSQ errors.

The state hospital patients showed the same relationships of physical and mental status. Of those who made only 0-2 errors, 50% were given a good physical rating and 20% were rated as in poor physical condition. Of those making 9-10 errors, only 17% were given good physical ratings, and 44% were rated as having poor physical functional status.

Physical Status and Face-Hand Test: When the face-hand test was used as the index of mental status, the same relationship to physical functional status was demonstrated (Table 2).

In each type of institution persons with negative face-hand tests were more likely to have a good physical rating than those who were positive in this test for chronic brain syndrome. A good physical rating was about twice as frequent in persons in whom the test was negative than for those in whom it was positive.

Comparison of Institutions: As evident in Table 1, the largest proportion of persons with poor mental status was found in the state hospitals, with the nursing homes next, and the homes for the aged third. The largest proportion of persons with poor physical functional status, on the other hand, was found in nursing homes, followed by the state hospitals, with the homes for the

TABLE 2

RELATION OF RESPONSE TO THE FACE-HAND TEST AND PHYSICAL FUNCTIONAL RATING IN EACH TYPE OF INSTITUTION

Physical Functional Rating

<i>Face-Hand Response</i>	<i>A</i>		<i>B</i>		<i>C</i>	
	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
<i>Homes for Aged</i>						
Negative (216)	144	67	57	26	15	7
Positive (290)	113	39	124	43	53	18
Total (506)	257	51	181	36	68	14
	Chi ² =39.18 df=2 p<.001					
<i>Nursing Homes</i>						
Negative (144)	49	34	56	39	39	27
Positive (281)	41	15	95	34	145	52
Total (425)	90	21	151	36	184	43
	Chi ² =29.55 df=2 p<.001					
<i>State Hospitals</i>						
Negative (52)	22	42	19	37	11	21
Positive (148)	32	22	56	38	60	41
Total (200)	54	27	75	38	71	36
	Chi ² =9.82 df=2 p<.01					

aged third. However, when the institutions were considered individually, and compared to each other, large differences were found between institutions of the same type, and marked likenesses between institutions of different types. Two of the homes for the aged and 5 nursing homes had as many, or more, persons with a positive face-hand test as 2 of the 3 state hospitals. Four homes for the aged and the 3 state hospitals had a larger proportion of their populations rated as B and C in physical capacity than did two of the nursing homes.

Whatever the "label" of the institution, the institutions which had high proportions of persons of poor mental status also had many with poor physical status, and the converse was also true. When each institution in the sample was ranked according to the mean of the physical functional status ratings of its residents, and this was compared to the mean of the MSQ error scores of its residents, a rank order correlation of +.53 was obtained, significant at the 1% level of confidence. When the institutions were ranked according to the percentage of persons with positive face-hand tests the rank order correlation of the proportion of positive tests to poor physical functional

status was $+.57$, also significant at the 1% level.

The mental and physical status of the institutional populations were more closely correlated than was either of these two factors with the type of institution. The contingency coefficient of mental and physical status was $+.37$; for type of institution and either mental or physical status it was $+.33$.

Comparison by Age: When the persons studied were classified according to age, a significant relationship between physical and mental status was noted for each age group in each type of institution, with the single exception of nursing home patients in the 65-74 age range (Tables 3, 4 and 5). Poor physical status was also found to parallel impaired mental status more closely than it did chronological age. In fact, in nursing homes and state hospitals, the relation between physical

TABLE 3

RELATION OF PHYSICAL FUNCTIONAL STATUS TO MSQ SCORE BY AGE GROUPS IN HOMES FOR THE AGED

Physical Functional Rating

MSQ Scores	A		B		C	
	N	%	N	%	N	%
Age						
65-74						
0-2 (54)	41	76	11	20	2	4
3-8 (35)	18	51	15	43	2	6
9-10 (17)	3	18	9	53	5	29
Total (106)	62	59	35	33	9	8
	Chi ² =24.629 df=4 p<.001					
Age						
75-84						
0-2 (125)	86	69	32	26	7	6
3-8 (96)	63	66	27	28	6	6
9-10 (54)	13	24	24	56	17	20
Total (275)	162	59	83	30	30	11
	Chi ² =44.57 df=4 p<.001					
Age						
85 or more						
0-2 (37)	17	46	16	43	4	11
3-8 (41)	10	24	23	56	3	20
9-10 (47)	6	13	24	51	17	36
Total (125)	33	26	63	50	29	23
	Chi ² =15.40 df=4 p<.001					

TABLE 4

RELATION OF PHYSICAL FUNCTIONAL STATUS TO MSQ SCORE BY AGE GROUPS IN NURSING HOMES

Physical Functional Rating

MSQ Scores	A		B		C	
	N	%	N	%	N	%
Age						
65-74						
0-2 (36)	8	22	15	42	13	36
3-8 (38)	7	18	14	37	17	45
9-10 (39)	4	10	15	38	20	51
Total (113)	19	17	44	39	50	44
	Chi ² =2.73 df=4 p ns					
Age						
75-84						
0-2 (38)	12	32	9	24	17	45
3-8 (81)	30	37	28	35	23	28
9-10 (90)	8	9	31	34	51	57
Total (209)	50	24	68	33	91	44
	Chi ² =24.19 df=4 p<.001					
Age						
85 or more						
0-2 (16)	6	38	7	44	3	19
3-8 (34)	10	29	13	38	11	32
9-10 (53)	5	9	19	36	29	55
Total (103)	21	19	39	38	43	42
	Chi ² =11.81 df=4 p<.02					

status and age was no greater than could be accounted for by chance. In homes for the aged, there was a significant parallel of older age and poor physical status, but the contingency coefficient of $+.36$ was smaller than that found for physical and mental status ($+.39$) in the same institutions.

The superiority of mental status over age as an index for the prediction of physical functional status can also be demonstrated by comparison of the oldest persons in good mental functioning (0-2 MSQ errors) with the youngest age group of poor mental status (9-10 MSQ errors). In the homes for the aged, for example, 46% of persons 85 years of age or older with 0-2 MSQ errors were in the best (A) physical functional category. By contrast, only 18% of those 65-74 years of age with 9-10 MSQ errors were rated as having good (A) physical functional status.

TABLE 5

RELATION OF PHYSICAL FUNCTIONAL STATUS TO
MSQ SCORES BY AGE GROUPS IN STATE
HOSPITALS*

Physical Functional Status

MSQ Scores	A N %	B N %	C N %
Age			
65-74			
0-8 (32)*	16 50	11 34	5 16
9-10 (37)	7 19	17 46	13 35
Total (69)	23 33	28 41	18 26
	Chi ² =7.92 df=2 p<.02		
Age			
75-84			
0-8 (32)*	15 47	12 38	5 16
9-10 (56)	9 16	22 39	25 45
Total (88)	24 27	34 39	30 34
	Chi ² =12.18 df=2 p<.01		
Age			
85 or more (27)**	4 15	11 41	12 44

* Because so few made 0-2 MSQ errors, they were combined into one group with those making 3-8 errors.

** Data not analyzed by number of MSQ errors because of small N.

SUMMARY AND CONCLUSIONS

Our results show that the mental and physical functional status of institutionalized aged persons are highly interrelated. The relationship is seen within each of the 3 types of institutions studied, and for all age groups.

In the different types of institutions it was found that persons tended to have disabilities consistent with the type of services to be expected in the institution. Thus, patients in state hospitals had the largest number with poor mental functional status, while there was predominance of persons with poor physical functional status found in the nursing homes. Nevertheless, institutions of a given type differed widely from each

other. Some homes for the aged and nursing homes had a larger proportion of persons with poor mental status than did some state hospitals, while some state hospitals and homes for the aged had more persons with poor physical functional status than did some nursing homes. Therefore, it is possible to make a more accurate prediction of a person's mental status on the basis of his physical status, or of his physical status by his mental status, than on the basis of the type of institution in which he is residing.

Physical functional status is not significantly related to chronologic age in nursing homes or state hospitals. In homes for the aged the relationship is significant, but even then mental status is better than chronologic age in predicting the physical status. A person 85 years of age or over with good mental status is much more likely to have a good physical functional status than a person 74 or younger who is in poor mental condition.

It is concluded that physical and mental aspects of functioning cannot be compartmentalized in aged persons; impairment of either can be regarded as indicating a need for comprehensive medical care. Recent trends in the development of special medical facilities in state hospitals, and both medical and psychiatric services in homes for the aged are apparent recognition of this phenomenon.

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TUBERCULOSIS IN STATE MENTAL HOSPITALS

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The mental hospital patient with tuberculosis presents a multifaceted problem of major importance to all who work with the mentally ill, as well as to those in epidemiology and in diseases of the chest. These patients with their problems have been much neglected. Until recently they were in the unfortunate position of the unwanted children of medicine. Chest specialists often dismissed the matter with such remarks as "But these people are crazy." When confronted with the problem, psychiatrists have usually confined their observations to speculative psychodynamics of no proven relevance to the pathogenesis of either the disease or epidemiology contagion. Worst of all has been the philosophy that these patients weren't going anywhere and, consequently, no physician should be too much concerned with their problems.

In order to rectify this attitude, the Commonwealth of Pennsylvania built a hospital expressly for such patients near Butler, Pa. Before it could be put to use, however, World War II had occurred and following it, the Federal Government moved in and is currently operating this hospital as a Veterans Administration Tuberculosis Center. Only gradually is the problem of the tuberculous in our state hospitals being solved. One focal point of such activity is the Tuberculosis Center at the Mayview State Hospital where we have studied 132 cases of active pulmonary tuberculosis culled from a patient population of 10,500 at 5 of the 7 state psychiatric hospitals² in the western half of our State.

Begun in 1949, the Tuberculosis Center at Mayview is a 140 bed, well equipped, self-sustaining unit, in some respects superior to the "ideal" proposed for such patients by the Committee on Hospitals of the Group for the Advancement of Psychiatry in January 1954(1), the same year our unit was completed and initially used.

Since 71 of our hospitalized psychiatric

patients with active tuberculosis at the Center, at the time of this study, were from Pittsburgh, it was possible to make certain statistically consistent comparisons between the tuberculous and non-tuberculous psychiatric patients at Mayview and between tuberculous psychiatric Pittsburghers and the Pittsburghers known to have tuberculosis but not confined to mental institutions.

A relatively high prevalence of tuberculosis among institutionalized patients and the depressed atmosphere which pervades so many non-psychiatric tuberculosis hospitals have been too frequently interpreted as indicating a mutual symbiosis between the two diseases at the expense of the patients, sharply delimiting therapeutic possibilities and worsening prognosis.

To what extent psychologic factors contribute to the development of pulmonary tuberculosis has remained a moot question, on which we hope this study sheds a little light. Wasserug and McLaughlin, as cited by Anderson(2), stated,

No one as yet has advanced any proof that there are physiological alterations in insanity which predispose a person to tuberculosis in the way, let us say, that silicosis does. Nor, conversely, has it been demonstrated that tuberculosis predisposes to mental disease.

Some feel that the induced dependency and frequently seen depression noted in the non-psychotic tuberculous are caused by the patient's infection and compounded by his hospitalization for it. His capacity to endure stress may thus be reduced and, in a susceptible individual, be so weakened that a psychotic break is precipitated. Pathogenesis of both conditions has been explained in such widely disparate terms as geologic, genetic, and geriatric. Tuberculosis is a physical, not a mental, illness. It flourishes in any crowded environment where the individual's needs are not adequately cared for, be it a tenement, a jail, or the back ward of a psychiatric hospital. Psychosis, on the other hand may be due to either functional or organic factors and

¹ Mayview State Hospital, Mayview, Pa.

² Somerset, Torrance, Warren, Hollidaysburg, and Mayview State Hospitals.

may be symptomatic of a disease entity or merely descriptive of an abnormal symptom complex, the exact biologic significance of which remains obscure. When tuberculosis is seen in the mental hospital patient, certain questions immediately arise. Foremost among these are:

1. What are the tuberculosis prevalence and mortality rates for such a population?
2. Which illness necessitated the initial hospitalization?
3. What is the length of time between the hospitalizations for the initial and complicating illnesses?
4. Do the age, sex, and race trends for these patients follow those for the non-tuberculous populations in the same hospitals and for the known cases of active tuberculosis in the general population?
5. What type of psychiatric illness is found most prevalently among the tuberculous in these hospitals?

The present study has undertaken to deal with these questions.³

REVIEW OF LITERATURE

Since the definitive article by Barnwell, *et al.* 6 years ago, there is found nothing noteworthy in a perusal of the Quarterly Cumulative Indices while articles on all the complications of tuberculosis from acromegaly to unweitis abound.

In 1953 Close, Hecker, and Glover(3) had reported a prevalence of 4 cases of active pulmonary tuberculosis per one thousand patients between 1945 and 1950 at the Veterans Administration Neuropsychiatric Hospital at Coatesville, Pa.; in 1951 they reported a prevalence of 3 cases per thousand.

In 1952 Tomkins(4) had reported a prevalence of 9.5 cases of active tuberculosis per thousand World War I veterans in all VA neuropsychiatric hospitals in comparison with 4.3 cases per thousand World War II veterans in all VA neuropsychiatric hospitals. In the same journal, Anderson(2) stressed the magnitude of the problem. He emphasized the vital importance of early detection and the higher incidence of tuberculosis in patients over 45 years of age. He

reported a prevalence of 27 to 40 cases of active tuberculosis per thousand psychiatric patients examined in psychiatric hospitals generally throughout the United States.

Oeschli(5) in 1949 had stressed the greater prevalence of tuberculosis among psychiatric patients hospitalized for several years. Bettag(7), in 1948, found the same prevalence of tuberculosis among psychotics as Anderson(2) was later to report.

It has been estimated that approximately 30,000 Americans in mental hospitals suffer from tuberculosis concurrently(1).

METHOD

This is a statistical study. The results represent a tabulation and logical breakdown of data gleaned from the records of patients at the Tuberculosis Center at Mayview State Hospital from March 1958 to March 1959. Comparative data for the non-tuberculous patients at Mayview were likewise analyzed. Similar statistics were obtained from the Office of Biostatistics Allegheny County Department of Health for the tuberculous patients not confined to mental hospitals in the City of Pittsburgh (6). Biostatistical consistency forced us to limit certain aspects of our study to the 71 tuberculous psychiatric patients from Pittsburgh. The remaining 61 had been transferred to the Tuberculosis Center from 4 other state hospitals in more rural Western Pennsylvania; the necessary comparative data were unobtainable for this latter group.

PREVALENCE AND MORTALITY

As of March 1, 1959 one hundred thirty-two cases of active pulmonary tuberculosis were found in a patient population of 10,500 at 5 state mental hospitals, for a prevalence rate of 13 per thousand.

When we consider only those cases admitted to the Tuberculosis Center from the non-tuberculous psychiatric wards at Mayview State Hospital, which services the City of Pittsburgh exclusively, we find 71 cases for a prevalence rate of 21 per thousand. During 1958, the Tuberculosis Registry listed 1,744 reported cases of known active tuberculosis for the general population of Pittsburgh(6). From this, we have estimated a prevalence rate of 2.7 cases per

³ The author wishes to acknowledge his gratitude for the technical assistance of Miss Diana Haberman and Miss Christine A. Cuomo.

1,000 for the city's general population.

From March 1, 1958 to March 1, 1959, there were 15 male and 12 female tuberculosis deaths in this population, giving us a tuberculosis mortality rate for the state mental hospitals of 270 per 100,000. The crude tuberculosis mortality rate for the general public in this same area at the same time was 10 per 100,000.

Concerning the fluidity of the patient population during the year, in addition to the deaths cited above, two patients were returned to their homes on general leave of absence, their tuberculosis inactive and their mental illness controlled. Six others, their mental illness in remission, were transferred to nonpsychiatric tuberculosis* hospitals. An additional 70 patients with inactive tuberculosis were returned to the nontuberculous wards whence they had come. Several of these patients had never

had tuberculosis and had been needlessly kept in isolation for long periods of time. A tuberculosis convalescent unit is sorely needed.

TIME RELATION BETWEEN HOSPITALIZATION FOR INITIAL AND COMPLICATING ILLNESSES

In 19 of our cases, active tuberculosis and severe mental illness were diagnosed during the period of the patient's initial hospitalization. Of the others, the patients whose psychiatric illness precedes a diagnosis of their active tuberculosis constitute more than 90% of the series (Table 1). Such patients may develop active tuberculosis at anytime; we found the median length of time in years between the initial hospitalization for mental illness and the diagnosis of active tuberculosis as a complication to be 15.8 years for the males and 10.0 years for the females (Table 2).

TABLE 1

NUMBER OF PATIENTS* AT MAYVIEW TUBERCULOSIS CENTER IN WHICH A PSYCHIATRIC ILLNESS PRECEDED TUBERCULOSIS COMPARED BY DIAGNOSIS WITH THE NUMBER OF PATIENTS WHOSE TUBERCULOSIS PRECEDED THEIR PSYCHIATRIC ILLNESS

	Psychiatric Diagnosis				Total
	Chronic Brain Syndrome	Psychotic Disorders	Personality Disorders	Mental Defective	
Tuberculosis Preceding Mental Illness					
Male 7%	2	5	1	0	8
Female 2.7%	1	2	0	0	3
Total 9.7%	3	7	1	0	11
Mental Illness Preceding Tuberculosis					
Male 61.1%	14	49	1	5	69
Female 29.2%	3	27	0	3	33
Total 90.3%	17	76	1	8	102

*1958

TABLE 2

YEARS BETWEEN ONSETS OF INITIAL AND COMPLICATING ILLNESSES FOR 113 PSYCHIATRIC TUBERCULOUS PATIENTS AT MAYVIEW STATE HOSPITAL

Psychosis Preceding Tuberculosis 102 patients		Tuberculosis Preceding Psychosis 11 patients			
Male	Female	Male	Female		
Number of Cases	69	Number of Cases	33	Number of Cases	8
Median Years	15.81	Median Years	10.00	Median Years	2.25

Considering the 11 cases where the patients were committed to a psychiatric institution from a tuberculosis hospital, we found a much shorter time interval. The median in years between the hospitalization for tuberculosis and the manifest onset of a serious mental illness as a complication necessitating transfer to a psychiatric center was 4.0 years for the males and 2.25 years for the females. Thus we see that, regardless of which is the initial illness, the median length of time in years between the onsets of the initial and complicating illness was significantly greater for the male. The relatively greater percentage of females committed to mental hospitals within 5 years of their initial hospitalization for active tuberculosis was striking (Graph 1). That a greater number of men were actually committed to our Center from tuberculosis institutions during this period was but consistent with the greater prevalence of active tuberculosis among males generally.

AGE, SEX, RACE

In Table 3 we have tabulated the median age for the tuberculous and non-tuberculous psychiatric population at Mayview State Hospital. The tuberculous psychiatric patient was definitely older than the tuberculous patient in the general population in Pittsburgh who was not confined to a men-

tal hospital; his median age was 53.8 years contrasted to the median age of 46.7 years for the latter group. However, he was younger than the non-tuberculous psychiatric patient at Mayview State Hospital, who had a median age of 57.6 years.

In terms of sex differences, the tuberculous psychiatric patient was more like the known case of active tuberculosis in the general population not confined to a mental hospital than he was like the non-tuberculous psychiatric patient at Mayview State Hospital. The known tuberculous cases from both the hospitalized psychiatric populations and the general populations were predominantly male. In our series, the male to female ratio was almost 2 to 1 (Table 4). In the general population, male predominance was less striking but marked (6). Approximately 53% of the patients in the state hospital population considered were females.

There was no striking age-sex difference in either psychiatrically ill population. In the non-white element of the general population, however, an appreciable sex difference in median age existed (46.9 years for the males and 34.0 years for the females).

We have failed to find any statistically significant racial difference in the prevalence of active tuberculosis among the psychiatric populations of our state hospitals.

GRAPH 1

YEARS BETWEEN THE ONSETS OF INITIAL AND COMPLICATING ILLNESSES FOR MALE AND FEMALE TUBERCULOUS PSYCHIATRIC PATIENTS HOSPITALIZED AT MAYVIEW STATE HOSPITAL IN 1958, GROUPED AS PSYCHIATRIC DISTURBANCE PRECEDING TUBERCULOSIS, AND TUBERCULOSIS PRECEDING PSYCHIATRIC DISTURBANCE

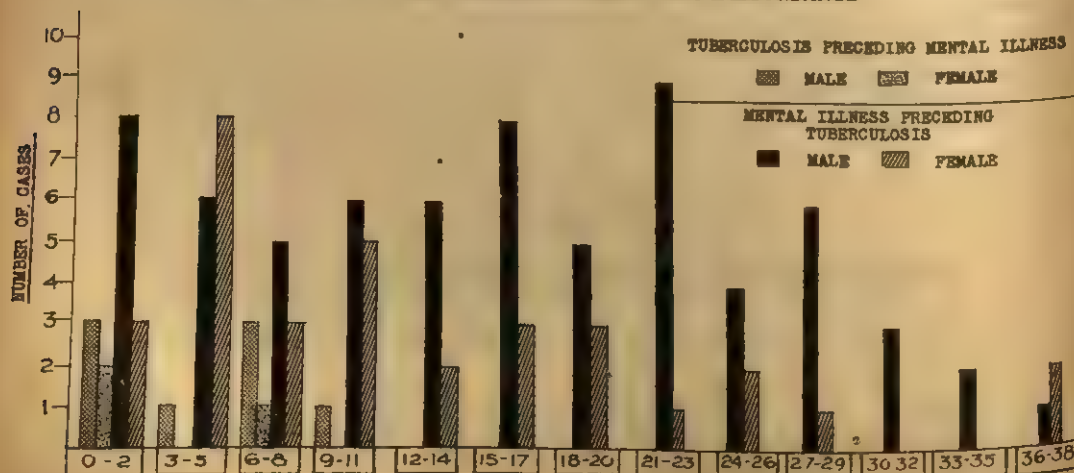


TABLE 3

MEDIAN* AGE IN YEARS AND QUARTILE DEVIATION (VARIABILITY) OF TUBERCULOUS AND NON-TUBERCULOUS PATIENTS FROM PITTSBURGH HOSPITALIZED AT MAYVIEW STATE HOSPITAL IN 1958

	Median Age			Quartile Deviation		
	Total	Male	Female	Total	Male	Female
Tuberculous Patients 71 Cases	53.8 Yrs.	54.5 Yrs.	52.6 Yrs.	8.65	8.5	8.55
Non-tuberculous Patients 3,245 cases	57.5 Yrs.	57.7 Yrs.	57.4 Yrs.	11.65	11.55	11.75

* The median is that point which separates the upper 50% of cases from the lower 50% of cases

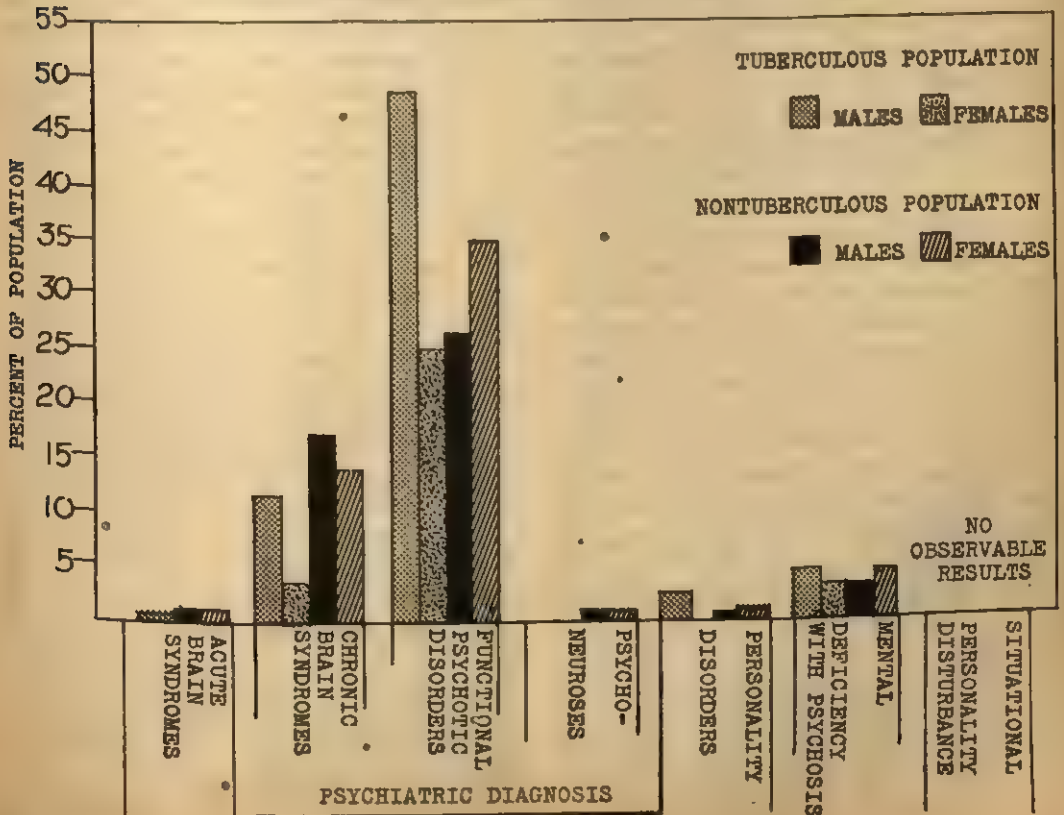
TABLE 4

SEX PREVALENCE OF MAYVIEW STATE HOSPITAL PATIENTS FROM PITTSBURGH-1958
(COMPARATIVE PREVALENCE OF TUBERCULOUS AND NON-TUBERCULOUS)

	Males		Females		
	Number of Cases	Per Cent	Number of Cases	Per cent	
Tuberculous Psychiatric	44	61.97	27	38.03	71
Non-tuberculous Psychiatric	1528	47.09	1717	52.91	3245

GRAPH 2

PERCENT OF POPULATIONS OF TUBERCULOUS AND NON-TUBERCULOUS PSYCHIATRIC PATIENTS HOSPITALIZED AT MAYVIEW STATE HOSPITAL IN 1958, GROUPED ACCORDING TO PSYCHIATRIC DIAGNOSIS



This, in itself, is of considerable significance since it did not hold for the city from which almost two-thirds ($2/3$) of our cases of active tuberculosis were derived; here there continued to be a relatively greater prevalence rate among the city's non-white population (6).

NEUROPSYCHIATRIC DIAGNOSIS

From what mental illnesses do the tuberculosis patients of our Center usually suffer? Graph 2 indicates that the greater percentage of both tuberculous and non-tuberculous psychiatric cases fall into the diagnostic classifications of functional psychotic disturbances and chronic brain syndromes. In these diagnostic classifications, schizophrenic reactions are predominantly most common in both tuberculous and non-tuberculous populations; however, a few of our tuberculous patients suffer from affective disorders *e.g.*, manic-depressive disease and involutional psychotic reactions. Where it could be learned, the cause of the chronic brain syndromes among the actively tuberculous was usually arteriosclerosis, syphilis, or alcohol, but none of these 3 causes of chronic brain syndromes was present in statistically significant numbers. Proportionately, fewer of the tuberculous patients suffer concurrently from chronic brain syndromes than do the non-tuberculous patients at Mayview State Hospital. This is especially true for the females in accord with the currently popular concept of active reinfection tuberculosis being a disease of old men. A minority of our patients were hospitalized because of mental deficiency with psychosis, personality disorders, acute brain syndromes, or psychoneurosis (Graph 2).

DISCUSSION

Along with the decline in its mortality rate, the entire epidemiologic picture of tuberculosis has undergone marked changes during the past 3 decades. While one after another tuberculosis sanatorium or hospital was being shuttered or converted to other uses, the disease which formerly exacted its greatest toll from the young adult-female population gradually changed to one most prevalent among old and indigent males.

Comparable changes were occurring in the scene at the state mental hospitals. As

the surrounding walls and barred windows have gradually disappeared, increasing frequency of mental illness in the aged has been observed while pellagrins have become rare and the tertiary luetics now constitute a much smaller proportion of the total patient population.

The greater prevalence of active tuberculosis in urban areas persists, as does the increased frequency of this disease and its relatively high mortality rate in prisons and mental hospitals. Whereas 20 cases per thousand of active tuberculosis among state hospital patients for every 1 case per thousand in the general population was cited by Barnwell, *et al.* (1) in 1954, we found this ratio to be less than 8 to 1 for the actively tuberculous psychiatric patients from the City of Pittsburgh in 1958 and the actively tuberculous in the city's general population. When we consider mortality rates, however, this ratio is 27 to 1.

Increased awareness of the possibility of patients contracting the disease has had several manifestations, notably an improvement in the general care and nutrition of the chronically ill psychiatric patient and the annual chest X-ray survey of the entire state hospital patient population.

Our prevalence rate of 13 cases per thousand for the 10,500 state hospital patient population studied and of 21 cases per thousand for the urban component of that group compares favorably with the 27 to 40 cases per thousand found by Anderson (2) 7 years ago, but not so favorably with the 3 cases per thousand reported by Close, *et al.* (3) for World War II veterans in 1951. The difference in patient populations seems to us a basic disparity to be grasped in resolving the latter. Our patients were much older and had been suffering from mental illness for many years before developing active tuberculosis.

Those few patients who were committed to mental hospitals and transferred to our Center after being initially hospitalized for their tuberculosis did so within 6 years. The women had developed mental illness earlier than the men. The tuberculosis experience of this group appears to have been incidental and non-specific in unmasking serious mental disease.

In comparing the tuberculous with the

non-tuberculous in our psychiatric hospital patient populations, we learned that no psychiatric nosologic peculiarities were consistently applicable to the tuberculous.

Ideally, the psychiatric hospital should provide an almost perfect environment for convalescence from pulmonary tuberculosis. Properly staffed and supervised, it should reduce to a minimum such problems as exposure of the uninfected, alcoholism, elopement, undernutrition, refusal to take medication, and control of its complications, each of which may be a major problem in the non-psychiatric tuberculosis hospital. That our situation was somewhat less than ideal was illustrated by the mortality rate and the fact that only 2 cases in a series of 102 who had been initially hospitalized for mental illness had their pulmonary tuberculosis discovered and isolation begun when the tuberculosis was still in its minimal stage.

SUMMARY AND CONCLUSIONS

One hundred thirty-two cases of active pulmonary tuberculosis from a patient population of 10,500 in 5 state hospitals were studied. Seventy-one of these were from the Mayview State Hospital servicing Pittsburgh. Biostatistically consistent comparisons could thus be made with data obtained for known cases of active tuberculosis in Pittsburgh not confined to mental hospitals. To answer those questions posed in the introduction :

1. There is a prevalence rate of 13 cases per thousand of actively tuberculous patients in the population from 5 of Pennsylvania's state psychiatric hospitals.

The prevalence rate was 21 cases per thousand of active tuberculous patients at Mayview State Hospital. This population was derived entirely from Pittsburgh where the prevalence rate for active tuberculosis in the general population not in mental hospitals was 2.7 cases per thousand. The tuberculosis mortality rate for these patients was 270 per 100,000. Male mortality rate was 300, and female rate 240 per 100,000. The general public's crude tuberculosis mortality rate was 10 per 100,000.

2. In 19 of our cases, no chronological primacy could accurately be assigned either disease.

Of the others, more than 90% had been confined to mental hospitals for several years prior to their tuberculosis being discovered. Only 2 of 102 of these cases had minimal tuberculosis when it was discerned.

3. The median length of time in years between the hospitalization for severe mental illness and the discovery of the complicating tuberculosis was 15.8 years for the males and 10.0 years for the females. When severe mental illness occurred as a complication in individuals initially hospitalized for their tuberculosis, the median time in years between hospitalizations for the tuberculosis and psychiatric disturbance was 4.0 years for the males and 2.25 years for the females.

4. The actively tuberculous in the general population of Pittsburgh not confined to mental hospitals had a median age of 46.7 years; they were predominantly males and a relatively greater prevalence of active tuberculosis was found in the non-white population.

Our tuberculosis patients derived from this urban area had a median age of 53.8 years. The male to the female ration approaches 2 to 1. The non-tuberculous hospitalized psychiatric patients in this group have a median age of 57.6 years and 52.9% of these patients are females. There was no statistically significant racial difference between the tuberculous and non-tuberculous psychiatric hospital populations.

5. Almost all the actively tuberculous psychiatric population hospitalized in this series suffered from functional psychotic disturbances (especially schizophrenic reactions) or from chronic brain syndromes, but there were no psychiatric peculiarities consistently applicable to the tuberculous.

If we are ever to eradicate tuberculosis from our state hospital population, earlier detection and more effectual control of all hygienic factors in the environment of hospitalized patients are imperative. The control of this major epidemiologic disease must be administered by those conversant with it.

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THE OPERATIONAL MATRIX OF PSYCHIATRIC PRACTICE

II. VARIABILITY IN PSYCHIATRIC IMPRESSIONS AND THE PROJECTION HYPOTHESIS¹

GEORGE N. RAINES, M.D.,² AND JOHN H. ROHRER, Ph.D.³

In a previous paper(3) an attempt was made to isolate pertinent variables responsible for differences between psychiatrists in reported psychiatric diagnostic impressions. In that study, reasonable experimental control was exerted over the following variables: (a) training; (b) experience; (c) nomenclature and definitions; (d) length of interview; (e) physical conditions under which the interviews took place; (f) motivation of the client interviewed; and (g) clients interviewed. Despite these equated controls, significant variations in psychiatrists' impressions were found. Moreover, the pattern of differences was unique for each psychiatrist and the pattern that characterized a given psychiatrist persisted in time. In an attempt to explain the observed differences between psychiatrists, a "projection hypothesis" was developed. This hypothesis derived from the assumption that variation between psychiatrists, with respect to diagnostic judgments, reflected differing frames of reference resulting from the unique transactional life experiences of the individual psychiatrist. It was hypothesized that this tendency makes the psychiatrist more sensitive to certain facets of the patient's intrapsychic dynamics, and also results in a greater perceptual distortion of other facets of the patient's personality structure, which are projected in the diagnosis.

This paper reports a study designed to test more specifically the projection hypothesis.

METHOD AND PROCEDURE

Subjects. The subjects used were 116 enlisted regular Navy men, all on duty at a Naval installation on the Eastern seaboard. The men formed a homogeneous group. Their average age was 23.7 years, and ranged from 19 to 28 years. Their NGCT scores ranged from 36 to 67 with an average of 51.8. They were all functioning satisfactorily in the billets to which they were assigned; none had been sent to Sick Bay for suspected psychiatric disabilities. The men were assigned at random for a 30-minute psychiatric interview with one of 4 psychiatrists. They were told that the interview was a part of an experimental study being carried out for the Navy.

Examining Psychiatrists. The 5 psychiatrists used in this study, were civilian psychiatrists. Table 1 summarizes their psychiatric experience.

All had received psychoanalytic training in the same institute. The fifth psychiatrist had given personal training analysis and supervision to the other four and thus had become well acquainted with each of them. He was requested to prepare an assessment of the personality structure of each of the junior psychiatrists using the knowledge he had gained from working with them. This constituted one set of data.

A second set of data was supplied by the psychiatric assessments of the enlisted men made by the 4 junior psychiatrists. These data were collected for use primarily in connection with studies of leadership. Prior to the start of the assessment program two 2-hour discussions were held by the psychiatrists where they reached common agreement on the areas of the personality structure to be examined in the interview, the nomenclature to be used, and the definitions of the chosen nomenclature. They dictated their clinical impressions immediately following each interview.

Thus, two independent sets of data were available for analysis: (a) transcribed psy-

¹ This study is a part of a larger research project supported by the neuropsychiatry branch, Bureau of Medicine and Surgery, U. S. Department of the Navy, under ONR Contract Nonr 1530(07) between the Office of Naval Research and Georgetown University. The opinions expressed herein are those of the authors and do not necessarily reflect the opinions of the sponsoring agency, the Department of the Navy.

² Dr. Raines died on Sept. 16, 1969.

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TABLE 1
PSYCHIATRISTS' PROFESSIONAL BACKGROUND

<i>Psychiatrist</i>	<i>Years Psychiatric Practice</i>	<i>Years Psychoanalytic Training (beyond personal analysis)</i>
I	9	3
II	5	2
III	7	3
IV	7	3
V	16	6

chiatric impressions of 116 enlisted men who had been assigned at random to 4 examining psychiatrists; and (b) written personality assessments on each of the 4 examining psychiatrists, prepared by the senior psychiatrist who was well-acquainted with their psychodynamic way of functioning.

Data Analysis. The major analytic tool used for evaluating the assessment data was the method of content analysis(2). The 116 clinical summaries were analyzed by tabulating the frequency with which references were made to each of 41 categories. These categories were chosen because they were used in the recorded summaries as diagnostic, descriptive categories one or more times. The categories used could be grouped under the following general headings: (a) physical appearance; (b) family referents and attachments; (c) dominant defenses utilized in interpersonal situations; (d) sexual adjustment and attachments; (e) intellectual factors; and (f) diagnostic terms used in the psychiatric

diagnosis. Statistical analyses of the frequency data were made through the use of Chi-square where applicable. For those categories found significant statistically, profiles were plotted for each psychiatrist.

RESULTS

The results of the Chi-square analysis are presented in Table 2. Of the 11 categories with sufficiently high frequency to permit statistical evaluation, 3 (passivity, dependence, and social insecurity) did not show statistically significant differences between psychiatrists. This finding was in agreement with the verbalized consensus of the psychiatrists' opinions to the effect that the subjects, as a group, could best be characterized as passive dependents seeking secure positions in society.

The finding of significance in the remaining 8 categories permitted the questioning of the assumptions underlying the use of the Chi-square test, namely that the varied personality configurations of the enlisted

TABLE 2
CHI-SQUARE VALUES FOR CONTENT ANALYSIS FREQUENCIES

<i>Category</i>	<i>Chi-Square Value</i>	<i>Level of Significance</i>
1. All Diagnostic Factors	7.91	$P > .05$
2. Appearance	31.80	$P > 0.1$
3. Security (social)	3.32	$P < .30$
4. Response to Authority	11.84	$P > .01$
5. Masculinity-femininity	21.88	$P > .01$
6. Passivity	3.00	$P < .30$
7. Intelligence	33.20	$P > .01$
8. Ambition	17.86	$P > .01$
9. Spread of Interests	11.20	$P > .02$
10. Dependence	2.20	$P < .30$
11. Aggression	19.58	$P > .01$

men were distributed equally between psychiatrists, or our assumption that the evaluative frame of reference used by the different psychiatrists was the same. The men had been assigned to psychiatrists through the use of a table of random numbers, to

guard against systematic bias. In a previous study(3) we demonstrated that potential lack of randomness was not responsible for similarly observed differences. Thus, the second assumption seemed the more reasonable one to reject. Figure 1 presents pro-

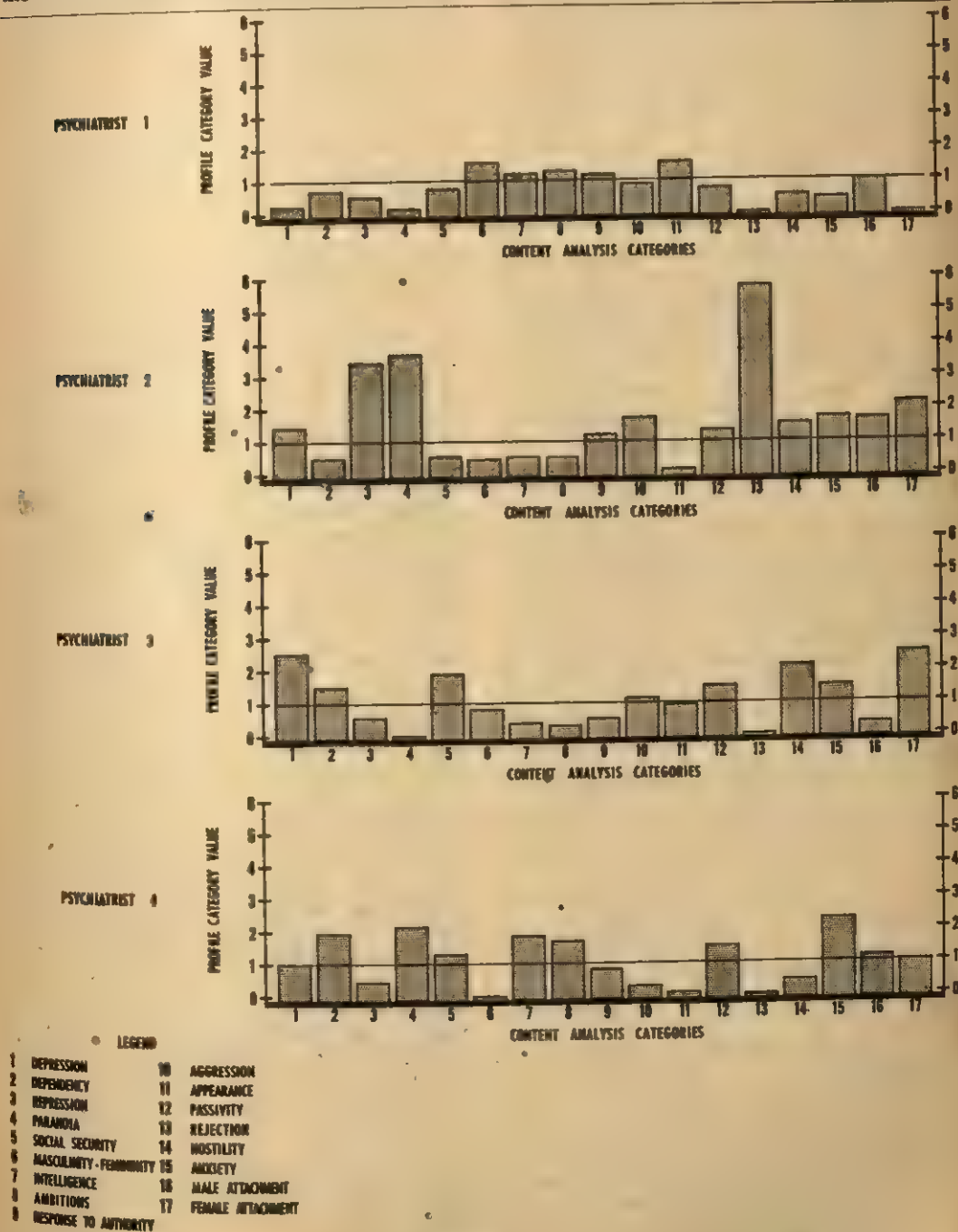


FIGURE 1
GRAPHIC PROFILES, BY PSYCHIATRIST, OF USAGE OF CATEGORIES IN WHICH
STATISTICAL SIGNIFICANT DIFFERENCES WERE OBSERVED

files⁴ for each psychiatrist showing the relative frequency with which they used the significant categories.

The profiles reveal the idiosyncratic pattern, by psychiatrist, suggested by the statistical analysis. An explanation of these patterns is given in the "projection" hypothesis—i.e., that differences observed in diagnostic judgments reflect a tendency, on the part of the psychiatrist, to attribute to his patient some of the psychiatrist's own personality characteristics. This results in a greater sensitivity, on the part of the psychiatrist, for certain facets of the patient's personality structure and a greater perceptual distortion of other facets of the patient's personality structure. In this study, to test further the projection hypothesis, a comparison was made between a verbalized summary of the facts revealed in the content analysis profile and the verbalized summary prepared by the senior psychiatrist. The pairs of descriptive paragraphs for each psychiatrist are juxtaposed and presented below.

Psychiatrist 1: Content Analysis Summary.

This psychiatrist places greatest emphasis on masculinity-femininity and personal appearance characteristics, with moderate overemphasis on intelligence and ambitions. He fails to note (on a relative basis) anxiety, paranoia, depression or hostility. He fails to see any evidence of rejection or female attachments.

⁴ Because the total number (frequencies) of usages of categories differed for each psychiatrist, it was necessary to correct for this factor in order to make directly comparable profiles for the psychiatrists. The formula used for correcting the frequencies was:

$$\text{Profile Category Value} = \frac{\text{pcOf}}{\frac{(\text{pTf})(\text{cTf})}{\text{psTf}}}$$

Where:

pTf = Total frequencies in all categories for psychiatrist X;

psTf = Total frequencies in all categories for all psychiatrists;

cTf = Total frequencies in a given category for all psychiatrists;

pcTf = Observed frequency in a given category for psychiatrist X.

The resulting profile category value would have a value of one, if psychiatrist X had shown the same proportion of use as did the other psychiatrists. The "diagnostic factors" category has been broken down into discrete nomenclature terms in the graphic presentation.

Senior Psychiatrist Evaluation. This psychiatrist is a middle-aged man who has been quite concerned about masculinity. He has need to avoid recognizing any personal need for affection from others, yet his pattern has been to "mother" other people considerably. He is inclined to be rigid and to place too much emphasis on such qualities as ambition and intelligence. He is too concerned with politeness, manners, and personal appearance, and at times not enough concerned with what goes on inside of people. His chief difficulty is his tendency to treat all people as "nice" people and to not recognize their hostilities or other psychiatric disturbances. This tendency to overly minimize the importance of psychiatric disturbances had on occasion interfered with his establishing an effective relationship with patients.

Psychiatrist 2: Content Analysis Summary.

This psychiatrist places greatest emphasis on rejection, repression, paranoia, and female attachments. He overemphasizes, to a lesser degree, anxiety, aggression, hostility, and depression. He tends to fail to report personal appearance, dependency feelings, feelings concerning masculinity-femininity, intelligence, and ambition strivings. *Senior Psychiatrist Evaluation.* This psychiatrist is middle-aged and is married. He is the older of two brothers. He had overly strong feelings of maternal rejection and still is quite competitive with a brother who managed to get ahead of him in school. He is of good intelligence. One of his chief difficulties has been his paranoid tendencies expressed by presenting himself, at times, as stupid and stubborn to avoid supposed exploitation. This has frequently resulted in people rejecting him. He has a studied disregard for his personal appearance, apparently trying to maintain the "country" appearance of his earlier childhood environment. He has a considerable need on the one hand to overlook hostility, and on the other hand to emphasize it unnecessarily. One of his difficulties in interviewing is his tendency to treat an interviewee as a "good boy" and to substitute a superficial type of friendliness for an attempt toward deeper understanding. His dependency needs are strong but he would likely neglect them. He has shown periodic periods of depression and is capable of sudden strong likes or dislikes.

Psychiatrist 3: Content Analysis Summary.

This psychiatrist places greatest emphasis on female attachments, depression, and hostility, with lesser overemphasis on security in social situations, dependency, passivity, and anxiety.

He tends to underemphasize male attachments, ambitions, and intelligence. He tends to ignore rejection and paranoia. *Senior Psychiatrist Evaluation.* This psychiatrist is in his middle thirties, an only child, and married. One of his big difficulties has been his dependent attitudes and his need to ingratiate himself in the presence of "superiors." Also, he tends to be overconscientious in reporting his felt limitations. He is particularly good at interviewing and probably picks up most pathology. His difficulties in an interview might be in handling some rather sudden hostile attitude on his part toward a client, or some unevenness due to a period of mild depression in himself.

Psychiatrist 4: Content Analysis Summary.

This psychiatrist places greatest emphasis on anxiety, paranoia and dependency, with lesser overemphasis on passivity, intelligence, and ambition. He failed to note any masculinity-femininity factors or any rejection. He tends to underemphasize personal appearance, aggression, hostility and repression. *Senior Psychiatrist Evaluation.* This middle-aged psychiatrist has recently been married. He was the younger of two sons and his mother's favorite. Earlier he had considerable anxieties about his dependency needs and handled them, as he grew up, by isolating himself more and more. He still has a tendency to overemphasize the importance of dependency needs. He has always tried to be "the best" person. When this was impossible he tried to finish second to a more brilliant colleague with whom he would establish an identifying relationship. He is acutely sensitive to paranoid tendencies and emphasizes them considerably. He tends towards a narcissistic obsessive picture with a tendency to intellectualize rather than to make use of his sensitiveness. I would expect him to identify with persons like himself in interviewing and perhaps to overemphasize intelligence.

DISCUSSION

The high degree of agreement between the summaries written on the basis of results from: (a) a content analysis made from each psychiatrist's written evaluation of clients; and (b) the independent evaluation of the psychodynamic structure of each assessing psychiatrist made by the senior psychiatrist, are favorable to the projection hypothesis.

Admittedly, the number of assessing psychiatrists was small, and perhaps the gener-

ality of the findings might have been enhanced if more senior psychiatrists, thoroughly acquainted with the assessing psychiatrists, had been available for use. The face validity of the results, however, minimize this latter consideration.

Coupled with the findings in our previously reported paper(3), the argument for the projection hypothesis becomes more convincing, since in the current study we were able to provide a valid *independent measure* of the psychodynamic structure of the psychiatrists and to demonstrate, with the assessing psychiatrists studied, that the projection hypothesis was substantiated.

The systematic objective data recorded herein offer evidence for the common observation that individual differences do exist between psychiatrists with respect to the relative effectiveness with which they are successful in recognizing various functional psychiatric syndromes. The data suggest that these individual differences can be attributed, at least in part, to internalized frames of reference (psychodynamic structure) acquired as a result of developmental social transactions. Vicarious experiences gained through the study of psychiatric theory and method are effective in decreasing the distortion of the perceptions and judgments of the assessing psychiatrist to the extent that they are effective in bringing about an alteration of this internalized frame of reference, the most important alteration being at an unconscious level. It is paradoxical that it is from such individualized, personalized frames of reference that theoretical advancements to the science of psychiatry must come, yet the same reference frames serve as one of the major impediments to a more rapid development of a science of psychiatry.

The data also make explicit the need on the part of the evaluating psychiatrist, to objectively consider his own psychodynamic structure, as well as the perceived psychodynamic structure of his client, when he is arriving at diagnostic judgments of the client, inasmuch as those judgments are formed from the interpersonal transactional matrix of the interview situation. The data suggest that for the most reliable psychiatric diagnosis and prognosis of a given client, it would be desirable to utilize pooled inde-

pendent judgments made by several psychiatrists with known different psychodynamic structures, and that these pooled judgments would best represent the psychodynamic structure of the client.

A study by Cohen, *et al.*(1) concerned with a somewhat different problem presents results that are entirely consistent with our hypothesis. The Cohen study was concerned with the recording and study of interviews carried out by psychiatrists with 3 successful Naval Officers. The average amount of interviewing with each officer was approximately 225 hours. The recorded interviews were each listened to separately by 3 different psychiatrists and interpretations were made of the psychodynamic processes revealed, as the interview proceeded. Later the psychiatrists jointly discussed their interpretations. The background of the psychiatrists and the results of their joint discussions can best be described by direct quotes from the Cohen report.

... all the participants in the project had received the major portion of their psychiatric training under the same teachers, and three had worked together in ordinary professional association for ten years.

... It was amply demonstrated that the participating psychiatrist, no matter how experienced, not infrequently failed to note the significance of some communication of the subject, and in retrospect, failed to recall the content and emotional quality of the interview with accuracy. This represents, of course, a source of error and delay in carrying out psychotherapy or any other interview procedure. The causes for the psychiatrists' inadequacies in evaluating the subjects' meanings apparently have to do with the emotions, tensions, and patterns of reaction in his own character.

These findings by Cohen, *et al.*, while in full support of our projection hypothesis, suggest that the processes involved include more than a projection mechanism. In our earlier paper(3) we alluded to such a conclusion by stating "... the psychiatric decision involves not only the psychiatrist's emotional problems and defenses, but also his entire value system and probably his self-image." In that paper our results, properly, could be generalized only to the projection hypothesis. Results presented in this paper offer evidence that the psychia-

trist's value system (*e.g.*, values of personal appearance, intelligence, ambition,) do in fact become involved and color the reports of clinical impressions; *i.e.*, that the psychiatrist unconsciously identifies with certain aspects of the client's psychodynamic functioning and reacts to that identification in terms of the way he positively or negatively values the characteristic in his own functioning.

It is probable that our findings concerning the role of the psychiatrist's psychodynamic structure enter into and influence another most important area of psychiatry, namely the area of theorizing and theory building concerning matters of psychodynamic structure and function.

As was noted in our previous paper(3), the technique of content analysis, as applied to clinical diagnostic summaries, would be useful when applied to the evaluation of psychiatrists being selected for, or in, training programs.

SUMMARY

The study was designed to test the hypothesis that observed variations between psychiatrists, with respect to diagnostic judgment, reflected a tendency on the part of the psychiatrists to attribute to his client some of the psychiatrist's own personality characteristics, and that this tendency made the psychiatrists more sensitive to certain facets of the personality structure of the psychiatrists and also resulted in a greater perceptual distortion for other facets of the patient's personality structure.

The design utilized involved 5 civilian psychiatrists all of whom had received advanced psychoanalytic training in the same institute. The 4 junior psychiatrists in this group were used as assessment psychiatrists in a special assessment program of 116 enlisted men on duty in a Naval installation. The senior psychiatrist was used to assess the psychodynamic structure of the 4 junior psychiatrists.

The data on the 116 enlisted men comprised diagnostic clinical summaries dictated immediately following an interview that lasted approximately 30 minutes. These data were analyzed through the use of content analysis techniques. Thus, two independent measures of the psychodynamic

structure of the junior psychiatrist were available: (a) the senior psychiatrist's impressions written up in the form of a clinical diagnostic summary; and (b) the "projected" reflections of the psychiatrist's psychodynamic structure as revealed in the content analysis of his clinical summaries.

Those content analysis categories that were found to differ between the junior assessing psychiatrists at a statistically significant level were compared with the comparable data to be found in the assessment made by the senior psychiatrist. A high degree of agreement was observed between the two independent measures.

The results of this analysis were interpreted as supporting the projection hypo-

thesis. They also suggest that the hypothesis needs to be expanded to include identification processes, and the psychiatrist's value system and self image. The results are briefly discussed in terms of their implication for psychiatric training, psychiatric theory building relative to psychodynamic principles, and reliable psychiatric diagnosis.

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AN EXPERIENCE OF PSYCHIATRY IN BRITAIN AND AMERICA

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It would be difficult to exaggerate the impact of Freudian psychoanalytic theory and practice on contemporary American psychiatry, and in turn, because of the almost frightening "psychiatric awareness" of the population, on the American scene itself. Consider, for instance, the veritable flood of films from Hollywood in the recent past in which a psychoanalyst has played a major role. He—or even she—in suave, measured tones creates order out of chaos and with magical facility explains the inexplicable. Even the language has been influenced: an odd assortment of phrases of pseudo-analytic jargon has been incorporated into everyday parlance. Thus, people no longer get on well together, they "relate themselves well to each other"; or they are "relaxed and well integrated" when they might have been written off as "rather nice."

The demand for psychotherapy, which is almost synonymous in the States with psychoanalysis, is enormous and far exceeds the supply of *bona fide* therapists. The situation is reflected in a cartoon in an American magazine in which a young, enterprising analyst is shown with a notice on the door of his office which reads "Three couches: No waiting!" Incidentally, it is an intriguing problem and one worthy of investigation, why psychoanalysis, a European transplant, should have flourished so luxuriantly in America and so far outgrown its parent root in Europe. To illustrate this point let it be noted that there are more psychoanalysts in practice in Philadelphia alone than in the entire United Kingdom. It should be added that there are many psychiatrists in Britain who subscribe to Freudian concepts as a psychological theory, but not as a psychotherapeutic procedure.

It must be pointed out, too, that the methods of referral to a psychiatrist in America differ radically from those which obtain in England where a letter of in-

troduction from the family doctor, or a brother specialist, is the accepted procedure. In America anyone who, in his own wisdom, considers he should consult a psychiatrist makes his own appointment at the clinic or office. Furthermore, the reasons for a psychiatric consultation are much more broadly based. The existence of "problems," that is to say difficulties of a day-to-day sort not causing distress or illness in the true sense of the words, are sufficient to warrant a consultation, or, maybe, the inception of a personal analysis. In all, it would appear that the American psychiatrist is endowed by the public with an omniscience and infallibility which mercifully does not obtain in England.

"Money speaks sense in a language all nations understand." What then is the relative cost of psychiatric treatment in our two countries? This is not the time or place to argue the rights or wrongs of the British National Health Service. Nevertheless, it cannot be gainsaid that since it came into being, adequate, or more than adequate, treatment is available to all "for free" on an in-patient or out-patient basis. Such private mental hospitals as remain offer little more than perhaps increased creature comforts for the high cost which ever rising prices compel them to charge. In America, on the other hand, the availability and quality of treatment is dictated by income. For the lower-income groups it is true that psychiatric treatment is offered free in the city or state hospitals which vary enormously, however, in their standards. For the rich there is no problem: the best treatment in the world is at their disposal, but at staggering cost. It is the middle-income groups for which a lengthy psychiatric illness might spell financial ruin in spite of a variety of medical insurance schemes which either exclude or provide reduced benefits for such an illness.

To consider the place of psychiatry amongst its sister disciplines in medicine: It is all too evident that in America, psychiatry, the erstwhile ugly sister, has been so glamorised that she is fast becoming the

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family favourite and now takes her rightful seat at, or near, the head of the family table. In England psychiatry still sits "below the salt." For some years now in America full psychiatric services have been available in most teaching hospitals and university clinics, and these services are rapidly spreading to other hospitals at a rate faster than in England.

As to the teaching of psychiatry, both undergraduate and post-graduate, the programmes in the states are much more ambitious than is the case in England where the battle for an appropriate place in the curriculum is still being waged. Furthermore, there is an ever-increasing trend in America to teach psychiatry not as an encapsulated subject, beginning and ending with the psychoses and neuroses, but to teach in addition the psychiatric implications of the many ills to which man is heir. Psychosomatic medicine, therefore, which was re-born in America, looms much larger in the theory and practice of medicine in general in America than in England.

What is more calculated to turn the visiting Englishman green with envy are the glittering academic palaces which stud the American psychiatric scene with their apparently unlimited resources for research in terms of money, man-power and equipment. Because of this academic affluence, research projects can be attacked on a broad front. In England, where the tradition of research on the bent-pin-and-bits-of-string tradition persists, research must be narrowed and the precise target carefully pin-pointed. In the circumstances, it is not surprising that some of the world's best research is carried out in the States. What is surprising is that England still makes her contribution, and a substantial one at that.

The emphasis on psychoanalysis as a psychotherapeutic procedure in America has been stressed. As to other psychiatric techniques there is seemingly little difference between the two countries, except, perhaps, in the degree of their use.

The attempt to drown both the neuroses and the psychoses in a sea of tranquilisers has failed and some sober re-thinking is

going on on both sides of the Atlantic. But there is now a rising tide in the use of the thymoleptics, or psychic energisers; already, in England at any rate, there is an undertow of criticism of these drugs because of their toxicity and side-effects and a call to stem the tide is being made until further assessment can take place.

In both England and America deep-insulin coma treatment for schizophrenia is on the way out: the leucotome is less in evidence, too; but electroshock in England, particularly in combination with intravenous anaesthesia and muscle relaxants, holds an honoured place in the treatment of the psychoses, particularly the depressions, despite competition from the psychic energisers.

The instrument, however, which promises to alter the entire face of British psychiatry is not a surgical, but a legal one. The Mental Health Bill (1959) has received the Royal Assent: the substantial changes in the law which it contains should begin to come into operation this summer. The new Bill is indeed a "Bill of Rights" for the mentally ill. It envisages the elimination of the time-honoured practice of treating the mentally sick as second-class invalids. Thus, in future, there will be no "designated hospitals": any kind of hospital may receive any type of mental patient whether on an informal basis or under detention. Furthermore, the emphasis is to be on prophylactic and/or domiciliary services so as to avoid admission to hospital of any sort. For those who do not need, or no longer need, in-patient care the local authority is obliged to set up all types of community care including day or residential training centres, residential accommodation in private homes or hostels, and general and social help and advice.

If the Brave New World for the mentally sick which Britain's legislators have designed is really built—and it is a momentous undertaking—then psychiatry, or perhaps to be more exact, social psychiatry in England, will have hoisted itself to a position of the first rank compared not only with America but with all countries of the civilised world.

MOTOR FUNCTION IN MENTATION ; IMAGERY AND HALLUCINATION ; THE INDEPENDENCE OF THE HIGHEST CEREBRAL CENTERS

MAX LEVIN¹

Liddell, in his thought-provoking work with sheep and goats, made an observation that sheds light on the neural processes of imagery. A metronome ticking once a second is a conditioned stimulus, a mild electric shock being given to the right foreleg on the eleventh tick. When the reflex is established, the behavior of the animal is as follows.

On the third or fourth tick of the metronome he executes a small, precise flexion of the right foreleg followed by a series of deliberate unhurried flexions of increasing amplitude and vigor. Coinciding with the eleventh beat of the metronome a brief electrical stimulus is delivered to the rhythmically flexing foreleg. In response to this electrical startle stimulus (he) executes a brief but vehement flexion of the foreleg reminding one of the withdrawal of the hand at the bite of an insect. Following this rapid, perfunctory flexion (he) immediately resumes his quiet, alert pose.

Liddell accepts Nolan Lewis' interpretation of this behavior, namely that the animal is "symbolically running away with his right foreleg only" (8).

While I have great respect for both Liddell and Lewis I submit that this interpretation is incorrect. In the first place locomotion with one leg in an animal with 4 good legs is inconceivable. In the second place the movements of locomotion, even if only symbolic, would not be "deliberate and unhurried"; they would be rapid. I suggest instead that the rhythmic flexion of the leg is the external sign of *anticipation*.

Having been conditioned, the animal recognizes the first tick of the metronome as the forerunner of a shock. Whatever he may have been thinking before stimulation, the first tick starts the process of anticipation. On the third or fourth tick the rhythmic flexion begins, increasing in amplitude with each tick, the animal knowing that each

tick brings the dreaded shock that much closer. The rhythmic flexion is a sign that he is thinking of the coming shock.

But why doesn't the animal think of the coming shock motionlessly? Why isn't he motionless for the first 10 ticks (which are not accompanied by shock), flexing the foreleg only on the eleventh, in response to the actual shock? He clearly is thinking of the shock before he gets it, and his thinking is associated with flexion of the leg, *i.e.*, with explicit, not implicit, movement.

If the animal could speak, he no doubt would say to himself, "Here is that infernal metronome again. A shock is coming soon. A shock makes me withdraw my foreleg." The image of the coming shock is accompanied by explicit rather than implicit movement because *implicit movement presupposes a more advanced brain than the animal possesses*. Implicit movement is a sign of high evolution.

An illuminating incident occurred in the case of a healthy infant who automatically responded to an aeroplane passing overhead by looking up at it and reaching for it. He also reached for it when he was indoors and heard a plane which he could not see. The incident occurred when he was 12 months old, not yet able to stand unsupported. He was standing at the bookshelf, holding on with one hand, while with the other he was tossing a pile of magazines one by one to the floor, a favorite pastime of his. Presently he heard a plane outside. Still holding on with the one hand, he reached aloft with the other, maintaining this posture until the plane had passed out of earshot, when he resumed his play with the magazines. His image of a plane included a motor component: one reaches up for it.

This lad grew up to become a jet pilot in the United States Air Force. Though he no longer reaches up to try to touch a plane in the sky, I venture to think that whenever he sees or hears a plane, or even thinks of one, action currents still race down

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the nerves to his shoulder muscles. But there no longer is overt or explicit movement, just implicit movement.

SPEECH

The distinction between explicit and implicit movement is clearly seen in speech, which is the most special and most complex movement of all. Implicit speech is inaudible; it is what we say to ourselves when we think silently. Primitive speech, as in the child learning to talk, is explicit, audible. The child says what he thinks. Enigmatic behavior, the ability to think without tipping one's hand, to keep one's thoughts to oneself, is a trait of the adult, or of the child who has reached an advanced stage of development.

Brain(1) has told us of the little girl who, when admonished to think before she speaks, protested, "But how can I know what I think till I hear what I say?" There is profound truth in her protest. Mentation is interwoven with movement (including speech), which, in early life, is explicit.

Why is it necessary to reach a certain stage of development before one can think without moving (or speaking)? It would seem that the highest cerebral centers must mature up to a point before they can function of themselves, without associated activity of lower centers. The highest centers are newer than lower centers. They are more complex and take longer to develop. At first they seem to "require the support" of lower centers, using them as a crutch. Only after a certain measure of growth and exercise can they dispense with the crutch and function independently, permitting mentation to take place, when necessary, without explicit movement (or speech).

Even at this later stage of development, when we can think without moving (or speaking), there is rudimentary movement, as in the action currents which I have assumed in the case of the man who as an infant reached up for the planes. Golla(3) recorded the movements of his own larynx, and found that when he sang an octave he obtained an ascending curve. When he merely thought of the octave he obtained a similar curve, but of smaller amplitude.

Since thought is so closely interwoven

with speech, it is understandable why some schizophrenics localize their auditory hallucinations in the throat, larynx and mouth. A schizophrenic with *Gedankenlautwerden*, whose case was reported elsewhere (6), said he was "loud-minded," by which he meant his thoughts were "loud," i.e., audible to other people. He said:

Whatever I think, you can hear, without me saying it with my tongue . . . Whatever I think, my voice-box goes like. I should think with my *head*, not my voice-box. [An example?] The other day I was wondering how my blood test was going to turn out, and I heard these words, "I wonder how my blood test is going to be." My lips didn't say it, my voice-box said it. I think in my voice-box, and then it goes up in my mind, and then it sounds just like—(gropes for a phrase)—transformed broadcasts . . . If I was natural (i.e., well), when I think of something, I'd think just a little bit. *This* way, I must think with my voice-box. I must *talk* it, but not with my tongue. It's all in my head.

Another schizophrenic heard voices which came in through his nose and mouth rather than his ears. When asked to explain this, he expostulated, "Your mind is connected with your *mouth*, isn't it?"

In thinking, we use not only the larynx and other organs of articulation, but, since words can be written, we also use our hands. In an article in a literary magazine Malcolm Cowley(2) provides some fascinating material on the physical aspects of the writer's craft. Most writers, he says, "are manual types. Words are not merely sounds for them, but magical designs that their hands make on paper." He quotes Simenon: "I am an artisan. I would like to carve my novel in a piece of wood." Cowley says further:

Hemingway used to have the feeling that his fingers, as they held a pencil, did much of his thinking for him. After an automobile accident in Montana, when the doctors said he might lose the use of his right arm, he was afraid he would have to stop writing. Thurber used to have the sense of thinking with his fingers on the keyboard of a typewriter. When he and Elliot Nugent were working together on their play "The Male Animal" Nugent would say to him, "Well, Thurber, we've got our problem, we've got all these people in the living room. What are we going to do with

them?" Thurber would answer that he didn't know and couldn't tell him till he'd sat down at the typewriter and found out.

Motor function plays an outstanding role in *reasoning*. If we were shown two photographs of a man, one made while he is listening to music, the other while he is doing a hard problem in mathematics, it would be easy to tell which is which. When listening to music a man's face is smooth and relaxed, but when he is doing mental "work" his brow is creased and furrowed.

There is motor activity even when one passively hears a sound. This matter is best understood in the light of Hughlings Jackson's formulations of the neural basis of imagery, which have been quoted elsewhere(5). But, speaking relatively, listening to music is a passive exercise, while problem solving is an active exercise. Problem solving is work—not only mental work but also muscular work as seen in the furrowed brow. What underlies this distinction between passive listening to music and the active solving of problems?

The answer is that reasoning and problem solving involve the manipulation of objects, if only implicitly. The prototype of reasoning is seen in Koehler's chimpanzee. Outside the cage there was a banana and two bamboo sticks, neither of them long enough to reach the fruit, which lay beyond reach. One day the animal fitted one stick into the other and now had an instrument long enough to reach the banana. Between this primitive reasoning and the reasoning of the chess player the difference is in degree only. The chess player may work out a problem without moving a muscle—he may be sitting as still as a statue—but there is movement just the same, implicit movement. There is what Jackson called an "idea of a movement"(4).

In these remarks on the independence of the highest cerebral centers I am merely repeating what Jackson said many years ago. In his paper "On Post-epileptic States," in Section VI, headed "On Degrees of Detachment and Degrees of Independence of Levels of Evolution," he wrote:

Another way of regrading the evolutionary process is to say that the several levels, in spite of their dependence on one another,

attain, as evolution progresses, a degree of independence of one another.

As evolution progresses the highest centres not only gradually develop (become increasingly complex, etc.), but also become more and more detached from, and more independent of, the lower centres out of which they have been evolved . . . There are degrees of detachment and of independence. . . Our highest sensory and highest motor centres (together the "organ of mind") can energise, to a large degree, independently of the lower centres out of which they have been evolved, and by aid of which they have been developed; consequently they can act independently of the environment . . .

The adult, who can think without speaking, may regress to the earlier stage. In some abnormal mental states the patient thinks out loud. On any busy street one comes across self-absorbed people, apparently demented, muttering to themselves out loud. A school teacher emerged from a catatonic stupor and became for a time very nearly normal. She recalled that during the first 4 days of her emergence she felt "horrible," because "I had no speech control. It seemed as if I couldn't *think* things but could only *say* them. There was a great fear in my mind that I would never again be able to think without speaking, and I thought how horrible it would be to have to go through life that way."

IMAGERY AND HALLUCINATION

Thus far our attention has been on movement, a motor function. In sensory function too we must consider the independence of the highest cerebral centers. Here we come upon the function of imagery and the pathological state, hallucination. There must be a reason why a patient has thought echo, or *Gedankenlautwerden*, in which he hears voices that repeat verbatim the thoughts in his mind.

Hughlings Jackson, with his characteristic insight, has given us a lucid formulation of the neural basis of imagery. He said:

I suppose that I am seeing a brick . . . What first happens is that there is a peripheral impression (upon the retina), impulses then pass through the lowest, through the middle, and up to the highest sensory centres . . . So far we have only stated one half of the

reflex action, have only reached the physical condition correlative with the colour of the brick. It and all other objects have shape, and this as much requires to be accounted for as the colour. The shape of an object is the relation of its several positions one to another; our knowledge of this relation is by movements, in this case ocular movements . . . By currents passing from the highest sensory centres, so to speak, "across" to the highest motor centres, and from these downwards, through middle and lowest motor centres to muscular periphery, there is development of movements of the eyeballs . . . Here we have . . . reflex action.

Jackson then considered what happens when we merely think of an object?

The vivid image, the mental state we have (when we see a brick) arises during (not from) the physical condition in the two divisions of the highest centres, and is strongly and definitely "projected," because the lower centres are engaged; it *seems* part of the outer world. Next day, we can think of the brick in its absence, have "an idea of it," or, as I prefer to say, have a faint image where yesterday we had a vivid image. In this case the reflex action is incomplete and weak; the lowest and the middle sensory centres and the middle and lowest motor are not engaged. The highest sensory and motor centres are alone engaged; there is still reflex action, but only the central links of the great sensorimotor chain are engaged; the central part only of the whole process which occurred in perception is done over again, and, the excitations being slight, the image arising is faint, and, the lower centres not being engaged, it is feebly and indefinitely projected, seems more part of ourselves.

Thus Jackson held that during both vivid and faint imagery there is reflex action. Reflex action characterizes the highest cerebral centers no less than the centers in the cord (7). But this does not concern us here. What does concern us is that a vivid image implicates all levels of the nervous system while a faint image implicates only the highest.

There is a correspondence between vivid and faint imagery on the one hand and explicit and implicit movement on the other. In vivid imagery and in explicit movement there is activity of all levels

of the nervous system, lowest as well as highest, while in faint imagery and in implicit movement activity is confined to the highest centers (except for rudimentary activity at lower levels).

We have already seen, in the sphere of movement, that the undeveloped brain does not permit mentation without explicit movement. At any rate, explicit movement seems to facilitate mentation: the child thinks out loud and the infant reaches for the plane. The same holds true *mutatis mutandis* in the sphere of imagery. In the young child vivid imagery accompanies mentation, may even be indispensable to it.

In the study of imagery and mentation we must guard against a romantic misconception in regard to the imagination of the child. It is often said that children have a "rich imagination," more so than their elders. Support for this view is seen in the fact that a small boy will float a block of wood in a puddle of water and call it a boat. But this view is based on a misunderstanding of what imagination really is. Imagination is the ability to see without the eyes, to see through a brick wall. It is the ability to picture an event in advance, to foresee a consequence. A woman with good imagination can look at a hat and know whether it will suit her; one with poor imagination must put it on her head and study the result in the mirror. Since imagination is so complex a function, it is naïve to suppose that children surpass adults in its exercise. This would be like saying that they surpass adults in mathematics. In point of fact they have a *weak* imagination.

Every parent is familiar with the following evidence. The child has a favorite story which he loves to have you read to him. He can hear it a dozen times a day without tiring of it. He has heard it so many times that he knows it by heart, and if you should omit a word or if in a series of adjectives you should transpose the order of words, he will sharply correct you. Why then, since he knows the story by heart word for word, does he want you to read it to him? It is because he cannot enjoy it without hearing it. He cannot *think* it unless he *hears* it. The adult, with his greater imaginative power, can think a thing even when he

does not hear it. He can visualize without having to see.

The bearing of this matter on hallucination has been considered elsewhere(7). The psychotic patient hallucinates because of a deficiency in the power to think abstractly. He has regressed. Here again we must beware of pitfalls in the popular use of the word "imagination." People say the patient *imagines* he hears voices and are apt to suppose that he imagines more than he should, that his faculty of imagination is overactive. In reality his power of imagination is diminished; he thinks in vivid images in circumstances that call for faint images.

In patients recovering from toxic delirium there is significance in the order in which symptoms disappear. While in some cases the symptoms seem to clear up simultaneously, in others they clear up in a certain order. Specifically, disorientation clears up first, while hallucinations persist for some days or weeks longer. Why does disorientation clear up *before* hallucinosis rather than after? There can be only one answer. Orientation is a relatively simple function, while the ability to think abstractly, to think without hallucinating, is more complex. We see this in the 3-year-old child, who is oriented—he can answer such questions as "Whose house is this? Who is this man?"—at an age when he still begs you to read him his favorite story though he knows it by heart.

Jackson had the useful habit of comparing phenomena different in their externals

and discovering that they illustrate a common physiological principle. He insisted on studying the nervous system from the evolutionary standpoint. It's only from this standpoint that we can understand the existence of a common principle in the motor response of Liddell's goat to the tick of the metronome; the child's wish to hear his story read to him; and the hallucinations of the psychotic adult—the principle that the highest cerebral centers, as they mature and advance, gain the ability to function independently of lower centers, an ability which they may lose from disease.

One hundred years from the publication of Darwin's book and nearly 50 years from Jackson's death, it is fitting to pay tribute to these men for having laid the basis for a proper understanding of brain and mind.

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THE USE OF RAUWOLFIA FOR THE TREATMENT OF PSYCHOSES BY NIGERIAN NATIVE DOCTORS

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It is well known that *Rauwolfia serpentina* or "snake root" has been employed by the traditional medical practitioners of India for the treatment of psychiatric disturbances for many centuries. It was introduced into Western medicine as a treatment for hypertension about 1949(1), and subsequently as a treatment for mental illness in 1954(2). It is not so well known that *Rauwolfia* has been used extensively by the native practitioners of West Africa as well, and probably also for many centuries.

During a recent tour of duty as a government psychiatrist for the Western Region of Nigeria (1957-1959) I found that while European medicine was highly regarded for the treatment of physical disease, the Nigerian almost invariably preferred to consult the native doctor for psychiatric illness. Almost all the patients attending the psychiatric clinic at Aro Hospital, Abeokuta had been previously treated by one or more native doctors. These included highly westernized patients who were aware that European psychiatric help was available. I had at first thought that the reason for the native doctors' prestige in the field of psychiatry was because of his intimate knowledge of the cultural milieu. Subsequent discoveries however, supplied another, or at least an additional, reason.

Patients attending the clinic frequently described the treatment given to them by native doctors. In addition to such magical practices as the smearing of the body with black soap to prevent being eaten by witches, and the incising of scalp and wrists to ward off malevolent utterances, they often mentioned that they were given potions that were very effective in putting them to sleep. Some mentioned that they had feelings of warmth in their hands and feet after taking the medicine; others described spasms of the neck muscles that pulled their heads to one side and caused their tongues to pro-

trude. Many of the patients who came to the clinic soon after having attended a native doctor showed extra-pyramidal signs—mask-like facies, loss of associated movements, excessive salivation, etc. It was clear that the native doctors were using drugs with very potent biological activity.

In order to explore this problem further I paid several visits to native doctors in the Abeokuta area. On a number of occasions I was shown patients who appeared to be in a profound sleep which had been induced by a "medicine made from a plant." The patient was said to sleep for up to 24 hours following ingestion of the potion. Finally I had the opportunity to spend two weeks in the home of one of the more famous native doctors, Chief Jimo Adetona of Okun-owa. He is a vigorous octogenarian who lives in a three-storied mud house with his 8 wives. He and his forefathers for 5 generations have been specialists in the treatment of mental illness.

His most important medicine² was a bitter, brownish liquid which he gave to almost all his patients. About 6 a.m. each patient was given a half glassful of this liquid; this was repeated at bedtime if the patient complained of insomnia. This medicine was prepared from the root of a tree. Lime juice was added to "make it stronger," (probably the effect was due to ascorbic acid which would prevent the oxidation of the active ingredients).

I was able to obtain a specimen of the tree used and with the help of William Stern of the British Museum in London identified it as *Rauwolfia vomitoria*, Afz.

I do not know how common the use of *R. vomitoria* is among the native practitioners of West Africa but I suspect it is very widespread. Such information is difficult to obtain because native medicines are jealously guarded family secrets and native doctors do not generally discuss their more important therapies among themselves. Dalziel

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² Other details of his treatment facilities and methods have been given elsewhere(3, 4).

(5), writing in 1937 describes the use of *R. Vomitoria* in West Africa as follows :

... The root bark has bitter properties and is a drug capable of drastic purgative and emetic effect if used carelessly. It is given for jaundice and other gastro-intestinal symptoms and in the Gold Coast it is applied in the form of an enema mixed with spices. In Nigeria it is given for convulsions in children. A decoction of the root can be used as a sedative for maniacal symptoms, inducing several hours sleep (Dr. O. Sapara). On the other hand the root of the same tree is recorded as in use as an aphrodisiac, taken macerated along with Guinea grains in gin.

It is interesting that in 1925, long before tranquillizers or shock therapies were known to European psychiatry, Chief Adetona, with his *Rauwolfia* medicine, travelled to England to treat an eminent Nigerian who had become psychotic there.

To return for a moment to some of the side effects noted above. Patients attributed the muscular spasms resulting in the pulling of the head to one side or backwards and the protrusion of the tongue to the effects of the native doctors' medicine, i.e. *Rauwolfia*. It is possible that these symptoms were due to *Rauwolfia* intoxication. Toxic effects of this nature have been described with prochlorperazine (Compazine, Stemetil) and chlorpromazine (Largactil). Paulson(6) notes tongue protrusion, tightness of muscles of tongue and throat, and bizarre posturing of the head and neck as being occasional toxic effects of these drugs. I am not aware of reports of such symptoms with *Rauwolfia* or Serpasil. The native doctor was uncertain or at least unwilling to say whether these symptoms were due to his medicine or to some other cause. At any rate he supplied me with medicines to put on the tongue and rub into the neck to prevent them. It is possible that with the poorly controlled dosages of *Rauwolfia*, intoxications would be more common with native treatment or possibly some of the alkaloids present in *R. Vomitoria* but not in *R. Serpentina* are responsible for these symptoms(7).

It is clear however, that the tongue and neck symptoms could occur apart from the

ingestion of *Rauwolfia*. Three cases of neck twisting, tongue protrusion, and the biting off of the tongue with fatal termination have been described(4). In addition, several other cases of spasms of the neck muscles with or without tongue protrusion and not associated with *Rauwolfia* were noted. It is interesting that such symptoms were not uncommon in Europe in the 17th and 18th centuries often associated with the ideas of witchcraft and devil possession. To cite two examples from Robbins(8) *Encyclopedia of Witchcraft and Demonology*, one Elisabeth Allier "possessed by two devils" was exorcised by a church father. The more pressure he put on the devils, the more was Sister Elisabeth seized with strange convulsions—her tongue twisted out of her mouth to the extent "of more than four fingers." A second example is that of one Thomas Darling who accused an old woman of bewitching him. One day he had 27 fits within 6 hours, "shrieking pitifully, blearing out the tongue, his neck so wrythen (twisted) that his face seemed to stand backwards."

It would appear that in western Europe since medieval times, not only has the attitude to mental illness undergone many changes, and the theories of causation, but the patterns of the illnesses themselves. It is possible that there is some similarity between the contemporary witch-ridden Nigerian cultures and the late Medieval European Culture . . . similarities in the level of personality development, patterns of belief and patterns of psychiatric illness. The question might also be raised as to the extent that toxic effects of a drug may be determined by the patient's individual or cultural fears, wishes or symbols in addition to his individual physiology.

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CLINICAL NOTES

TRANLYCYPROMINE IN DEPRESSION : A CLINICAL REPORT

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Tranlycypromine (trans-dl-2-phenylcyclopropylamine) is a non-hydrazine monoamine oxidase inhibitor, one of a series of new drugs being investigated in the treatment of depression. During a 9-month period, I used tranlycypromine in the treatment of 34 men and 10 women (average age: 46 years—range: 20 to 71 years) with a variety of mild to moderately severe depressive states. The diagnoses were: reactive depression, 27; involuntional depression, 10; manic-depressive depressed, 6; cyclothymic depression, 3; and obsessive compulsive with depression, 2. Presenting symptoms included: indecision, anxiety, inability to concentrate, loss of interests, increased irritability, insomnia, anorexia, various vague somatic complaints, feelings of guilt and unworthiness, pessimism, compulsive and gloomy thinking, emotional instability, and suicidal tendencies.

To reduce the effect of spontaneous remission or placebo reaction, I excluded from the study patients whose depression seemed to be the result of an acute personal crisis. In addition, only patients who had failed to respond satisfactorily to previous treatment with drugs or psychotherapy, or who had responded only to electroshock therapy during previous episodes, and in whom the current episode had persisted for at least 3 months, were included.

Most patients in this series received initial doses of 40-50 mg. of tranlycypromine a day, in divided doses (range: 30-60 mg.). This dosage was usually reduced by 10 mg. after 5 to 7 days of treatment, and further reductions of 10 mg. were made at weekly intervals until the patient was receiving 30 mg. or less a day. Treatment was usually continued for 2 to 3 months (average: 10 weeks). Non-analytic psychotherapy was continued throughout the evaluation for all patients; 6 patients received tranquil-

izers, and 4 EST, in addition to tranlycypromine.

Alkaline phosphatase, cephalin flocculation, and/or serum glutamic oxalacetic transaminase tests were made in 28 patients both before and during treatment with tranlycypromine. In addition, blood pressure readings were taken at each visit, and patients were questioned about the occurrence of other side effects.

RESULTS

The patient's improvement was rated in terms of his ability to resume a normal (for him) level of activity and efficiency. The response of patients who experienced a complete or nearly complete return to "normal" was considered *Satisfactory*; equivocal change or failure to improve was called *Unsatisfactory*. By these criteria, results were *Satisfactory* in 34 (77%) patients, and *Unsatisfactory* in 10 (23%).

In the patients who responded to therapy, some lessening of the severity of symptoms seemed evident within 72 hours, and optimal improvement occurred within 10 to 14 days. There seemed to be no one symptom that disappeared dramatically, no sudden resolution of doubt or worry. Instead, a more subtle diminution of all or most symptoms seemed to occur which was reflected in the patient's behavior, often before he was aware of the change. However, when the patient recognized the improvement that was taking place, his participation in psychotherapy increased markedly, and subsequent improvement was rapid. The overall response of these patients was marked by elevation of mood, increased alertness, disappearance of apathy and confusion, increased optimism, recovery of satisfaction and enjoyment in work and social relationships, and a return of appetite.

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SIDE EFFECTS

Eight different side effects were reported by 17 patients. They included: headache, reported 11 times; insomnia, and dizziness, 7 times each; constipation and drowsiness, 2 times each; and leg cramps, nausea, and anorexia, each reported once. These effects usually occurred at doses in excess of 40 mg. a day, and were controlled by reducing the dosage of the drug. Liver function tests values remained normal throughout the evaluation. There were some fluctuations of diastolic and/or systolic blood pressure, but I could find no correlation between these changes and the side effects reported.

COMMENT

It is difficult to explain why a drug should

be effective in some patients and ineffective in others with the same disorder. An examination of the case histories of the 10 patients in whom results of treatment were *Unsatisfactory* suggested one common factor of possible significance. In each patient, although diagnoses and symptoms varied, anxiety or agitation was a relatively important component of the overall symptom complex. It is possible, that the existence of strong symptoms of anxiety in a depressed patient seriously limits the beneficial effect of this drug. This possibility is weakened, of course, by the fact that some of the patients who improved also exhibited symptoms of anxiety, although, in my opinion, to a lesser degree.

MEMORY CHANGES WITH MAO INHIBITOR THERAPY

• LEON D. HANKOFF, M.D., AND BORIS HELLER, M.D.¹

The side effects seen with pharmacological treatment are generally regarded as troublesome artifacts which may interfere with treatment. Side effects, however, may sometimes provide us with valuable clues as to the pharmacology of a drug. Of particular interest have been the side effects giving evidence of neurophysiological activity, e.g., convulsions and extrapyramidal symptoms with phenothiazine treatment. Fink, in formulating a neurophysiologic-adaptive theory of somatic therapy, has emphasized the occurrence of neurologic side effects with those agents showing greatest clinical efficacy in the psychoses. In the present report, observations have been made regarding an apparently benign side effect occurring with monoamine oxidase (MAO) inhibitor therapy. This is a defect in recent

memory; and it may provide a clue as to the nature of the altered brain functioning associated with the antidepressant activity of the MAO inhibitors.

Approximately 100 ambulatory depressed patients were treated in the Mental Health Clinic, Kings County Hospital Medical Center, with isocarboxazid. The usual treatment course was 10 mg. t.i.d. for 8 weeks. The patients were seen at weekly intervals in brief followup interviews after an initial workup. During the course of the study, several patients complained of recent memory loss; and, as a consequence, an inquiry into memory functioning was made part of the followup interview routine. To date, 8 patients have presented the complaint of recent memory loss. All 8 patients claimed to have had normal memory before using the medication and on intake psychiatric interview there had been no evidence of organic brain disease. The age range was from 24 to 59 with a mean of 43.1 years.

The complaint of memory difficulties usually began after two to three weeks of drug treatment and cleared up within a week of drug discontinuation. The patients complained that they forgot details of recent

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events, misplaced things, or failed to attend to minor chores. A frequent comment was that the patient could not remember whether he had taken the latest dose of his medication. Several mentioned that they had forgotten to pay for items taken from store counters; and one suggested that his attention span for such details seemed narrower. In contrast, memory for distant events was unimpaired. Seven of the 8 patients showed a considerable degree of clinical improvement, generally seen at about 3 weeks of drug treatment, that is, somewhat later than the memory impairment onset.

Our findings suggest that altered brain functioning of clinical significance may accompany MAO inhibitor therapy. It may be that this altered brain functioning is related to the phenomenon of clinical improvement

associated with this therapy in depressive illness. It is well known that impairment in memory accompanies electroshock treatment; and some correlations between the degree of altered brain functioning and clinical response have been made for the electroshock process. It should be noted, however, that only a small fraction of our patients manifested a clinical degree of memory impairment and that the vast majority of clinical improvements we observed were unaccompanied by this side effect. We are presently engaged in a systematic investigation of memory impairment in isocarboxazid therapy. The possibility that some particular aspect of recent memory functioning, *e.g.*, recall or attention span, may be differentially affected is being studied through psychometric testing.

PERSISTENT MUSCULAR RESTLESSNESS AFTER PHENOTHIAZINE TREATMENT: REPORT OF 3 CASES

WALTER KRUSE, M.D.¹

Case 1.—This is a 55-year-old female patient diagnosed as paranoid schizophrenia. In 1957 she was treated for many months with chlorpromazine up to 1,600 mg. daily. In April 1958, trifluoperazine was given up to 90 mg. daily. After 2 months of this high dosage there was a very remarkable improvement of her mental condition. Trifluoperazine was then slowly decreased. In December 1958 when she was on 20 mg. daily our patient developed an increasing muscular restlessness largely but not completely confined to the legs. This restlessness subsided at night when patient went to bed, but it was very annoying all day long. There were also occasional jerky, involuntary movements of both arms and involuntary lip and tongue movements. (Except for minimal facial fixity and slight salivation there had been no Parkinsonian symptoms in this patient before the rather sudden appearance of the akathisia-like syndrome.) Trifluoperazine was now gradually withdrawn, the usual antiparkinson drugs were given, phenobarbital up to 300 mg. daily was also tried—but all this was of little or no benefit. Our patient still cannot keep her legs still—after 18 months—but the recently started treatment with 75 mg. of

methaminodiazepoxide (Librium) daily has helped considerably to control the involuntary movements.

Case 2.—A 58-year-old schizophrenic woman who was treated with 20 mg. of fluphenazine and 300 mg. of trifluoperazine daily developed an akathisia syndrome which consisted of inability to sit still, pacing the floor all day, jerky movements of arms and shoulders. When the addition of 2 antiparkinson drugs showed no result the phenothiazines were withdrawn. Three months later the patient still is restless, cannot sit still and shows infrequent involuntary movements of both arms, but there is some improvement.

Case 3.—This is a 50-year-old paranoid schizophrenic woman who has been ill for a long time but who was only recently admitted to this hospital. She began to show restlessness of her legs when she was on 400 mg. daily of thioridazine. Here again the usual antiparkinson drugs were without effect. Thioridazine was discontinued after a month during which the restlessness had increased in severity. She was then given 40 mg. daily of methaminodiazepoxide and again there was considerable

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but not yet complete relief from the annoying involuntary leg movements and the distressing feeling of muscular restlessness.

DISCUSSION

While it is true that the drug-induced extrapyramidal symptoms usually disappear within a few days after the drug is discontinued we have now seen 3 cases (among more than 2,000 patients that have been treated with various phenothiazines over long periods) where these symptoms persisted for 3-18 months after the drug was

stopped. The question arises whether phenothiazines are always as innocuous as we had believed them to be.

In the three cases reported here one might speculate that the phenothiazines precipitated the development of an extrapyramidal syndrome in patients that were already predisposed for it. The fact that all three patients were 50 years or older might suggest the presence of vascular changes in the extrapyramidal system as the organic basis for such a predisposition.

ON THE MEASUREMENT OF ADRENOCHROME IN BLOOD

AXEL RANDRUP, Ph.D., AND IB MUNKVAD, M.D.¹

The fluorimetric method used by Hoffer *et al.* (1) for the determination of adrenochrome (or closely related substances) in blood has been the subject of some controversy (2, 3, 4, 5, 6, 7, 8). Recently a detailed description of the procedure was published by Payza and Mahon (6), and following this procedure we have obtained experimental data which may be pertinent. The data² are open to interpretation, but our own conclusion is that because of the high blind values, reliable measurement with this method is not possible.

The experiments were made with meticulous care and the published procedure followed in every detail, the only exception being the separation of the protein, which we carried out by centrifugation at 3,500 r.p.m. in a swingout centrifuge head. This relatively slow centrifugation may be the cause of a slight turbidity which was in some cases observed in the plasma blank. To control the possible effect of this turbidity upon the measurements of fluorescence, we made in 14 experiments simultaneous measurements of two or four parallel plasma blanks; in some of these experiments one plasma blank was clear and another turbid, in others there was difference in the degree of turbidity, but in no case could we observe any difference in the

fluorescence. Clear plasma blanks could be obtained by filtration, but even the purest filter papers gave off a little fluorescent material, enough to have serious influence on the accuracy of the measurements. We therefore preferred the centrifugation. The tube with reagents incl. Zn also was slightly turbid in some cases, but also here we could ascertain that the turbidity did not influence the fluorescence. The measurements were made with an Aminco-Bowman spectrofluorometer, which also permitted observation of the activation and fluorescence spectra. The fluorescence spectra of the plasma extracts with and without Zn were similar to those published by Payza and Mahon (6), but also the reagents alone (with and without Zn) gave spectra of similar shape.

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¹ From The Biochemical Laboratory, Sct. Hans Mental Hospital, Department E, Roskilde, Denmark. Director: I. Munkvad.

² Available upon request from the authors.

THE EPINEPHRINE-MECHOLYL TEST APPLIED TO A STATE HOSPITAL POPULATION

PANDELIS K. PANDELIDIS, M.D., AND ROBERT D. BUSIEK, M.D.¹

The epinephrine-mecholyl test (Funkenstein Test)(1) has been used as a means to determine prognosis and to guide treatment in mentally ill patients. This has been done largely with private patients or on hospital services admitting a select group of patients. The concern of the present study² is the application of the test to the somewhat different population admitted to a large state mental hospital. Here, such factors as age, chronicity of disease and socio-economic background tend to give an unfavorable prognosis as judged by ordinary clinical methods. Comparison of this expectation with test results and ability of the test to add to clinical judgment in this group were sought.

MATERIAL AND METHODS

One hundred and thirty-two patients were selected at random from new admissions, excluding those who had recent treatment, those with organic psychoses, and most of those with a diagnosis of psychopathic personality. They ranged in age from 16 to 75, with an average age of 39 years. Eighty-eight were female and 44 male. The Funkenstein test was administered by one of us, and utilized 10 mg. of Mecholyl IM with blood pressure and other observations for 30 minutes, followed by 1/20th of a cc. of 1/1,000 epinephrine IV with an observation period of 5 minutes. Treatment was given without reference to the Funkenstein test results. The test results were classified on the basis of Funkenstein's criteria without the modifications used by Alexander(2).

Observations on patients who remained hospitalized were necessarily more complete than on those who left the hospital. Psychiatric and social service evaluation was usually possible for many months on an

outpatient basis, however. The test results were not included in the patients' records during a three-year follow-up period.

For the purposes of this paper, patients were classified as recovered, improved, or unchanged. Discharge from the hospital and maintenance of a social adjustment without the need for intensive therapy was taken as indicating recovery. A classification of improved was made on the basis of adjustment either inside or outside the hospital. The difficulties of this sort of evaluation of psychiatric patients are acknowledged, and they make the results inferential rather than conclusive.

RESULTS AND DISCUSSION

As applied to our patients, the Funkenstein test allowed a classification similar to that reported by others. On clinical grounds, it was expected that a high proportion of our patients would have a relatively unfavorable prognosis. With roughly 50% in the favorable and 50% in the unfavorable groups, this assumption is given some support. The usefulness of the test in these patients is now to be considered.

Nearly 50% of the patients fell into the group with the highest recovery rate. Most of the patients in this group received ECT, some in combination with thorazine. Of these, 64% recovered. Treatment in this group with drugs alone or psychotherapy was less successful. This favorable effect of ECT is to be contrasted with results of convulsive treatments in other groups where approximately 50% received ECT with a recovery rate averaging 24%. This is suggestive that ECT was the treatment of choice in the high recovery group.

The unfavorable groups comprise a therapeutic problem. Group V was given a very poor prognosis by both Funkenstein and Alexander. The recovery rate appears to be higher in the present series. One explanation may be the use of thorazine, both alone and with ECT. It may be expected that the test groups would provide an indi-

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² We wish to acknowledge the assistance and encouragement given in this study by Dr. W. E. Glass, Superintendent, Taunton State Hospital.

cation for the use of drugs as well as for other forms of therapy. Drug therapy in the present series was so limited, however, that this remains conjectural. Alexander's (4) use of non-convulsive electric stimulation to improve the prognosis in certain patients also is an indication that the test may provide a basis for more effective therapy.

It has been stated that the prognostic value of the test exceeds that of clinical diagnosis. While this may be true if diagnosis alone is considered, clinical prognosis is usually based on many other factors also, including heredity, prepsychotic personality, and environmental factors. While the test may provide additional information, it is likely that a final evaluation will necessarily include the traditional considerations also.

SUMMARY AND CONCLUSIONS

The Funkenstein test was given to 132 patients newly admitted to a large state hospital. It was concluded that the test probably is capable of giving valuable prognostic information about such patients. The possibility that it gives an indication of the most effective form of therapy was also raised.

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MOOD ELEVATING EFFECTS OF CHLORPHENOXAMINE HCl

DAVID M. EISENBERG, M.D., AND GERALD H. ROZAN, M.D.¹

The method of this study was to give a large dose of chlorphenoxamine HCl² to a group of psychiatric patients with varied diagnoses, but all with a depressed mood, to determine if a primary euphoric effect would be produced.

Doshay³ has indicated that this drug has a mood elevating and energizing effect. It was introduced as a therapeutic agent for paralysis agitans and was found to influence muscular rigidity. It was also noticed that the patients experienced an elevation of

mood. The question was then raised as to whether this euphoric effect was primary or secondary to the alleviation of unpleasant physical symptoms.

Chlorphenoxamine HCl which is similar in chemical structure to diphenhydramine (Benadryl) hydrochloride was always used in the dose of 100 mgms. q.i.d. Twenty-three patients were given the drug for 3 weeks and were evaluated at weekly intervals. Nineteen of the 23 were evaluated as having had an elevation of mood. Of the 5 patients who did not have a beneficial effect, 2 appeared mildly agitated. One stated that he was "more nervous." There were no deleterious side effects. An elevation of mood was seen generally within 3 to 4 days. Further studies seem indicated.

¹ From the Psychiatry and Neurology Service, VA Hospital, Bronx, N. Y.

² The chlorphenoxamine HCl (Phenoxene) was supplied by Pitman-Moore Company, Indianapolis, Ind.

³ Doshay, L. J., and Constable, K. : *J.A.M.A.*, 170 : 37, 1959.

Diagnosis	Number of Patients	Elevation of Mood	No Elevation of Mood
Neurotic Depressive Reaction	3	3	0
Alcoholism	6	6	0
Paranoid Schizophrenia	3	3	0
Undifferentiated Schizophrenia	10	6	4
Chronic Brain Syndrome	1	1	0

SERUM PROTEIN PARTITION AND NEW DRUG EVALUATION

JOHN R. SHAWVER, M.D., AND STANLEY M. TARNOWSKI, M.S.¹

Recently we participated in a cooperative chemotherapy study supervised by the Central Office of the Veterans Administration, of 20 chronic, quiet schizophrenic patients. During this double blind study all these patients were taking chlorpromazine in daily doses of 200 mg. to 400 mg. and all of them continued to take chlorpromazine in the same dosage throughout the study. In addition these drugs were added: dextro-amphetamine (Dexedrine) 10 mg. to 60 mg. daily was given to 4 patients, isocarboxazid (Marplan) 5 mg. to 30 mg. daily was given to 4 patients, trifluoperazine (Stelazine) 5 mg. to 30 mg. daily was given to 4 patients, imipramine (Tofanil) 37.5 mg. to 225 mg. daily was given to 4 patients, and 4 patients received a placebo. This study extended over a period of 5 months and 18 patients completed the project. The results will be reported later by the Central Office of the Veterans Administration after all reports

from participating hospitals have been received and analyzed.

A sensitive method of measuring hepatic function is the quantitative partition of serum proteins employing electrophoretic technics. This method of detecting hepatic damage was added to the group of tests generally accepted as "liver function portfolio." The serum proteins were estimated at monthly intervals employing a Spinco Unit and procedure B.

In our series of 18 patients, no abnormal findings were observed as measured by this technic. However, false positive results were occasionally observed in cephalin flocculation and thymol turbidity test which could not be duplicated nor were they clinically significant.

CONCLUSION

It is recommended that in evaluating any new drug with regard to possible liver damage, serial estimations of serum proteins by electrophoretic methods be employed.

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CLINICAL OBSERVATIONS ON RITALIN¹ HCL
(METHYLPHENIDYLACETATE) INJECTABLE,
MULTIPLE DOSE VIALKURT WITTON, M.D.²

The parenteral use of Ritalin, the cerebral stimulant and antidepressant, is relatively new and has not been evaluated thoroughly. This study of the effects of injectable Ritalin was made on 40 male patients, ranging in age from 26 to 69; 31 were chronic schizophrenics hospitalized for more than 5 years and 9 were depressives (neurotic, involutional and psychotic).

Each patient was given 6 to 10 treatments

at several day intervals within 4 to 6 weeks. A one week observation established pre-treatment blood pressure patterns. Treatment consisted of intravenous injections of 1 cc (10 mg.) per minute; tolerance was established by increasing test doses, starting at 20 mg. Full vial (100 mg.) was excessive; optimal dosage was found to be 5 cc (50 mg.). Each patient was observed from one to several hours, frequent blood pressure checks were made. The physician conducted 40 to 50 minute psychotherapeutic interviews similar to those in narcoanalysis. Since the often impressive "explosive catharsis" sometimes lasted several hours, trained aids continued psychotherapy. Of the 40 patients, 10 also received intramuscular injections of 2 cc of Ritalin

¹ The Ritalin used in this investigation was kindly supplied by Dr. F. J. Vinci, of the Ciba Pharmaceutical Products, Inc., Summit, New Jersey.

² VA Hospital, Fort Meade, S. Dak. The statements and conclusions published by the author is the result of his own study and does not necessarily reflect the opinion or policy of the Veterans Administration.

daily for 10 days; this was continued 2 or 3 times weekly for several weeks.

Each patient served as his own control. Comparative treatments were given with intravenous Desoxyn (methamphetamine, 20 mg.) and sodium amytal (7½ gr. in 10 cc of H₂O). No change showed in the basic pattern of the 10 patients who underwent electroencephalographic studies. No blood dyscrasia or liver damage were observed.

This study shows that injectable Ritalin has greater and more immediate effect than its oral dosage. The main observations were:

The marked cerebral stimulation resulted in an immediate feeling of well being. Frequently "explosive catharsis" produced favorable abreaction with reduced hostility, anxiety and depression. Alertness, concentration, conation, speech, coherence, memory recall were greatly stimulated and improved. Often psychodynamically important repressed material was released, giving new perspectives for treatment. In chronic depressed or apathetic patients this abreaction might be the turning point where continued stimulation and remotivation efforts will result in successful therapy. In several cases of muteness, catatonia, lethargy, an immediate reversal and improvement were obtained.

Side reactions dependent on individual tolerance and sensitivity and possibly related to pressor effects were restlessness, palpitation, dryness of the mouth and exaggerated muscle activity, which subsided within 30 minutes. Headaches were rare, in a few cases insomnia was found. No seizures occurred. Sodium luminal, gr. 2 im. or sodium amytal gr. 3½ im., abolished side reactions quickly. Panic reactions with dyspnea, chest constriction and fear of im-

mediate death occurred in 3 patients of high sensitivity, only when the full (100 mg.) dose was given.

Contrasting opinions in reference to Ritalin's effect on blood pressure range from no essential change to hypotensive and hypertensive effects, the majority reporting moderately increased blood pressure. In this study 22 of the 40 patients had a significant systolic pressure increase averaging 50 points. Of the remaining 18, 10 had increases of from 30 to 50 points. The diastolic pressure increased to 90 or more in 36, in 24 of whom pressures of 100 or over were found. Although caution is recommended in determining optimal dosage, a large safety margin is apparent.

Prolonged intramuscular use on 10 patients had no dramatic effect but seemed to improve chronic depression. Counter effect on lethargy or sedation produced by barbiturates and tranquilizers was confirmed.

Ritalin was found very effective in the treatment of hypotension, particularly orthostatic, following the use of some phenothiazines and anti-depressants. It can be safely given with most phenothiazines. If given preventively in doses of 2 to 4 cc i.v., the parenteral use of phenothiazines such as chlorpromazine and promazine is safer because a dangerous drop of blood pressure to shock level might be prevented. This is particularly recommended in cases of a labile cardiovascular system. Since the content of thought processes becomes overt during treatment, Ritalin has great value in differential diagnosis.

In psychotherapy, compared to the frequent agitation following Desoxyn and the amnesia following sodium amytal, Ritalin favors more lasting improvement in alertness, memory recall, mood and affect.

PRELIMINARY RESULTS WITH FLUPHENAZINE (PROLIXIN) IN CHRONIC PSYCHOTIC PATIENTS

JOHN P. HOLT, M.D., AND ELEANORE R. WRIGHT, M.D.¹

Following a pilot study in which 5 of 6 chronically disturbed patients displayed significant improvement in psychotic behavior after treatment for 3 days with

fluphenazine (Prolixin),² a clinical study was undertaken at this hospital to evaluate the drug in a more extended series of patients with chronic mental disorders. Most

¹ Embreeville State Hospital, Embreeville, Pa.

² Supplied by E. R. Squibb & Sons

of the patients chosen for study were considered to be "management problems"; all were resistant to earlier ataractic therapy. Fluphenazine proved to be a highly potent psychopharmacologic drug with the swiftest onset of action and the longest duration of effect of any other oral ataractic agent yet employed at this hospital. Preliminary findings in the use of this drug are briefly presented below.

METHODS

Thirty-one male and 19 female patients, age range 33 to 78 years, were suffering from chronic psychotic disorders, diagnosed as schizophrenia in 26 patients, manic-depressive reactions in 3, involutional psychotic reaction in 6, and chronic brain syndrome in 15 patients. All of the patients had been hospitalized for at least 3 months, some for as long as 16 years. The average stay in hospital for the group was 4.1 years. Each had received one or more ataractic drugs such as chlorpromazine, trifluoperazine, prochlorperazine and reserpine. Nine of the patients had also received ECT. Though many had improved temporarily, none had shown significant progress for the two months prior to the present study, and several were refractory to all types of drug therapy.

Fluphenazine was administered orally throughout the study either as tablets containing 1 mg. or 2.5 mg. of the drug, or as an elixir containing 5 mg. per cubic centimeter. Initial doses ranged from 1 mg. to 22.5 mg. a day, depending on the severity of symptoms, smaller doses being prescribed for the elderly, or those with asso-

ciated physical illnesses. The dosage was adjusted, as indicated, during regular weekly evaluations of each patient. An effort was made to establish the maximum amount each could tolerate without unwanted effects and the minimum amount that was beneficial. Maintenance doses, given once or twice daily, varied from 1 mg. to 15 mg. a day. Treatment was continued in every case for at least 70 days.

RESULTS

The results of treatment were as follows:

A response to fluphenazine was often apparent within 24 to 48 hours and significant improvement, even in chronic drug-resistant patients, was frequently seen within 3 weeks. Benefit was usually first manifested by the patients becoming less impulsive, more cooperative, and more interested in their surroundings. Delusions, hallucinations and bizarre behavior generally subsided more gradually. Perhaps the most striking feature of therapy was the profound tranquilizing effect of fluphenazine in hyperactive and aggressive patients on the one hand and, on the other, its psychomotor stimulant action in activating passive, inactive, lethargic patients.

Unwanted effects common to other phenothiazines were encountered with fluphenazine such as drowsiness, dry mouth, insomnia, headache, and gastrointestinal complaints. These reactions usually subsided spontaneously or responded to symptomatic measures. The most frequent and bothersome reactions were motor restlessness, dyskinesia and parkinsonism syndrome; these were controlled by anti-park-

Diagnosis	Total No. of Patients	Markedly Improved *	Moderately Improved *	Unimproved *	Total No. Improved
Schizophrenic Reactions	26	3	12	11	15
Manic-Depressive Reactions	3	1	1	1	2
Involutional Psychotic	6	2	3	1	5
Chronic Brain Syndrome	15	1	6	8	7
Totals	50	7	22	21	29

* Marked improvement: complete remission of all objective symptoms and significant relief or subjective symptoms; good candidate for rehabilitation.

Moderate improvement: partial remission of objective and subjective symptoms; patients easier to manage on the ward.

Unimproved: no significant change.

insonism medication and/or a reduction in dosage.

CONCLUSIONS

Fluphenazine is a highly potent psychopharmacologic agent which is effective in controlling behavioral symptoms in chronic psychotic patients with the most pronounced changes manifested in reduced agitation and tension and improved social-

ization; the drug is also effective in controlling hallucinations and delusions. Through greater individualization of dosage may be required with fluphenazine than with other phenothiazines for maximum benefit with minimum reactions, fluphenazine appears to have great potential usefulness in the treatment of chronic psychotic patients.

HISTORICAL NOTES

I REMEMBER STEWART PATON

Among other good reasons there is one especially strong personal one for remembering Stewart Paton, for it was he who directed my steps into the labyrinth of psychiatry, from which, lacking the thread of Ariadne, it has never seemed possible to find the way out.

Of real significance however, is the fact that it was Paton who in his quiet and courtly way initiated the advance movement in psychological medicine at the Johns Hopkins School of Medicine at the turn of the century, exerting an influence that was to be felt far beyond the boundaries of the United States.

Only six years earlier Weir Mitchell had dropped his bombshell among the psychiatrists—alienists they were usually called then—assembled in Philadelphia for their semi-centennial meeting. He chided them for their lack of science and for not conducting their hospitals so as “to keep treatment or scientific product on the front line of medical advance.” It was institutional men that Weir Mitchell was addressing and he upbraided them for the institutional climate that he called “asylum torpor.” He reminded them too, that in treating patients, what it is necessary to deal with “is not a disease, but a disease plus a man.” Herein he felt the asylum men largely failed.

But if psychiatry was backward in the America of the eighteen-nineties so was the teaching of medicine generally. However, during that decade a revolution in medical education was getting under way at the newly established Johns Hopkins School of Medicine in Baltimore, and a pattern was set that was to be followed at other schools throughout the country.

It was the era of “The Four Doctors”—Welch, Osler, Kelly, and Halsted—and the beginning of “The Heroic Age of Medicine” as Simon Flexner called it. Soon there were gathered about the four founders other eminent and preeminent teachers, men “of the highest character and the greatest skill,” as Johns Hopkins had specified in his in-

structions to his trustees. By the time the school opened in 1893 and the first class was launched, the faculty had been expanded to fifteen, and others were soon added. Teaching in all the branches of medicine was being redesigned and broadly amplified, virtually on a graduate level from the start as compared with other schools (the Hopkins was the first medical school in the country to require an A.B. degree or its equivalent for entrance).

In this early group of teachers was Stewart Paton. He gave a new direction and a new impetus to the teaching of psychiatry reflecting the methods of the German clinics. The advanced position of Germany in this department can be illustrated by the fact that Griesinger, while *Privatdozent* in Tübingen, had written the first modernly organized textbook in 1845, while the first comparable American text (Spitzka's *Insanity*) did not appear until 1883. By the turn of the century each of the twenty-odd German universities had a well organized psychiatric clinic and teaching staff and where clinical, pathological, and psychological research was going on.

With all this work Paton had personal knowledge and he set about writing the first modern textbook of psychiatry on the American continent. This 600-page volume was published in 1905 and became at once the standard teaching text. But Paton had in mind something beyond pedagogy. “My main object has been to call attention to that aspect of the subject which is in accord with the results of observations as they are conducted today at the bedside and in the laboratory . . . to stimulate to greater activity the interest in the investigation of problems in the solution of which will be found the means of increasing the brain power of the nation.” (Paton would not allow himself not to be hopeful.)

This book was probably reprinted once without revision as it is listed again in a Lippincott catalogue dated 1912, after which date the publishers report that it

must have been allowed to go out of print. It is a great pity that the author did not bring out new editions to keep his book updated and as a continuing guide among the divergent paths that psychiatry took as the twentieth century advanced.

In the last decade of the nineteenth century there came into existence a new private psychiatric facility in the Baltimore area to which Paton made a major contribution. This was the Sheppard and Enoch Pratt Hospital at suburban Towson, of which Dr. Edward N. Brush was superintendent. Dr. Brush availed himself of the services of Dr. Paton to organize and direct the scientific work of the hospital. Paton was appointed director of the laboratory and he set the pattern for both clinical work and pathological investigation, and for training young medical graduates to become psychiatrists. It was my fortune to be the first of a long line of trainees who in those early years came under Paton's benign and stimulating influence and guidance. When he proposed this post to me he did not omit to mention the desirable living quarters at the hospital, the congenial family life there and especially the excellent staff table, having in mind no doubt the likelihood that impecunious medical students had not always dined sumptuously.

Dr. Paton might almost be called a free-lance social scientist. Having independent means he gave freely of his time and his wisdom wherever and however they would best serve the interests of mental medicine, education, student training and welfare and social health. A fixed position such as that of the head of a university department with routine duties and administrative tasks would hardly have been to his liking. As associate in psychiatry at the Hopkins he could enjoy freedom of action. The students' main contact with him was in the outpatient service where he could instruct them in the neurologic and mental health problems of everyday life.

Paton was, I think, about the sanest psychiatrist I have known, at least I haven't known a saner. He taught that mental disease and mental health are based on the total physiological economy. He harbored no preconceived idea or theory that he must defend. He did not set up a school. He

emphasized constantly the importance of education both in promoting sound living and a healthy mind and in correcting unwholesome trends that predispose to mental breakdown, and that, if recognized and dealt with in time, might be alterable.

While Paton doubtless exerted his greatest influences and made his most important contribution in the huge area in which psychiatry, mental hygiene and education are included, his interests were many, one of the strongest being the embryology and biology of the nervous system. And so it was that after completing his textbook he came back to this subject by spending several years in the marine laboratory at Naples investigating the embryology of the central organs in the material there available.

On returning to the United States in 1910 he settled not in Baltimore but in Princeton, New Jersey, where he lectured at the university on neurobiology. During that period I was attached to the staff of the New Jersey State Hospital at Trenton and as Paton had been appointed a trustee of this hospital I had the advantage of further contacts with him both in Trenton and Princeton.

It was at Princeton that he originated a mental health consultation service for students. This was in 1910, a turning point in university health services. "Until that time," as Paton has told us, "the results of the physical and academic examinations were not brought together so as to give students some connected idea of their physical and mental activities and of what they were psychobiologically fitted to do." Of every student referred or voluntarily seeking advice he made an exhaustive case study. As might have been expected this innovation in university life received the hearty cooperation of "many, but not all, members of the faculty." The high value of what he could offer, however, was obvious when he reported some of his findings, "students who had pronounced suicidal, homicidal impulses, sex perverts, those who stole, cheated, were exceedingly egotistical, aggressive and showed other signs of serious maladjustments."

Having demonstrated the value of mental hygiene counselling for students at Princeton, not alone as an integral part of the health services but also as an important

feature of the educational process, Paton had the opportunity of initiating similar work at Yale and later at Dartmouth and Columbia. The movement has since spread across the country. "I switched from psychiatry to education," Paton had said, "as it seemed to me that unless students and the public were educated in humane ways of living there would be no way of checking the spread of the emotional and mental disturbances that are the greatest existing menace to democratic forms of government and to civilization."

When World War I came to the United States Paton was one of the first Americans to visit Canada, already a veteran of the war, to learn of her experience in dealing with psychiatric war casualties—"shell shock" as they were commonly called, perhaps because of the striking alliteration. Paton's advice was sought in Washington in setting up the psychiatric service in the American army and his recommendation to the Surgeon-General of the appointment of Thomas W. Salmon to organize this service in the A.E.F. and Pierce Bailey for like duty on the home shores was profitably adopted. It should be recorded also that Paton was one of the first to insist on the importance of psychiatric examination of aviators; he was appointed director of the neurological division of the research laboratory established at Mineola at the beginning of World War I.

Stewart Paton was a peaceful man^o but no pacifist. Of World War II he said, "the present plague of insanity is the most contagious, virulent pestilence of which we have any record. To believe that we can remain pacifists, non-interventionists, and isolationists in the present war is a symptom of insanity." He could speak out when the forces of night threatened the daylight of the world.

The establishment of the Henry Phipps Psychiatric Clinic as a part of the Johns Hopkins Hospital represented one of Dr. Paton's major goals. Adolf Meyer, the first director of the Phipps Clinic, said "Without his stimulus William Osler and William H. Welch would hardly have become the sponsors for the donation of Mr. Phipps." And Dr. Welch made the statement that it was

Paton who had helped him to understand the importance of psychiatry in medicine.

When the Phipps Clinic was formally dedicated in 1913, with an impressive international panel of speakers, Paton was appropriately given first place on the program.

Paton's influence in promoting psychiatry was salutary in four universities, at Columbia in supporting the appointment of Dr. Salmon as professor of psychiatry and at Yale in collaborating with Dr. Winternitz, the professor of medicine, in establishing the Institute of Human Relations, and at Johns Hopkins and Princeton as has been noted. He was also a trustee of the Carnegie Institution and of the Josiah Macy Jr. Foundation.

Many honours came to Dr. Paton. In his later years, because of impaired health, he felt it necessary to decline some of those that would have involved considerable responsibility. One that he particularly valued and regretted the inadvisability of accepting, was his choice for the Presidency of the American Neurological Association.

Although he did not keep his textbook in print in new editions he was busy later in writing other books of wider reach in the interests of education and healthy living. One of these, coming shortly after World War I, was *Education in War and Peace* (the Harvey Lecture).

Paton was a fine human being and lessons could be taken from his own exemplary pattern of life. Some of the notable things he did may not be generally remembered because he worked so quietly and unostentatiously. It is desirable therefore to recall that it was he who pioneered in all the forward movements in the United States of his time in the science of human conduct and the promotion of sane living. Among the numerous new lines of work he laid down it would be difficult to select one as being more important than the others. Certainly none has been of greater and more enduring value than his unique contribution in setting up at Princeton University the first mental health clinic in America for students in the higher institutions of learning, a service now widespread throughout the country.

C.B.F.

COMMENTS

1960 CAMPAIGN FOR POLIO PROTECTION

At the request of the United States Public Health Service the National Health Council is cooperating in publicising the urgent need of expanding further the use of the Salk vaccine as a protective measure against polio throughout the nation.

There are still too many needless cases of this crippling disease. In 1959 there was a 54% increase over 1958 of paralytic polio cases. Of these cases, 82% occurred in persons who had not been fully vaccinated. Nearly half of all paralytic cases were pre-school age children. There are still 4,500,000

children under 5 who have received no vaccine.

Remembering that the Salk vaccine proved approximately 90% effective in the prevention of polio in persons fully vaccinated in 1959, any cases in persons who have not been fully protected must be regarded as *needless*. Inertia, complacency and groundless prejudice and fears must be combatted. All local psychiatric and neurological societies are urged to cooperate actively with health authorities in extending the use of the Salk vaccine uniformly throughout their respective communities.

THE SOCIAL PROBLEM OF EPILEPSY IN PERU

Liga Peruana Contra la Epilepsia.—The Peruvian League Against Epilepsy, with headquarters in Lima (President, Dr. Federico Sal y Rosas, General Secretary, Dr. José Sánchez G.), a filial institution to the National League has planned an active program for the next two years in public education, scientific studies, training of students, lectures for general physicians, providing treatment for indigent epileptics and workshops for the employment of needy patients, education of the epileptic child, securing employment in industry for suitable cases, establishing special treatment centers and securing legislation in the interests of epileptic patients. Surely a formidable program, and a wonderful undertaking.

It is estimated that there are 100,000 epileptics in Peru (10:1,000 population), the natives of that country being more susceptible to convulsive disorders than people in temperate climates. In one of the slum areas of Lima a ratio of 56 per 1,000 population was found.

Work of the League is handicapped by prevailing prejudice and superstition. The rank and file regard the convulsive attack with horror, consider the condition contagious and the patient dangerous. It is also

thought that manual or intellectual work aggravates the disease.

There are 3½ million children of school age (5-19) in Peru; of these, 36,000 are epileptic, the great majority of whom would be able to attend school. But they are excluded from the schools because of the prejudice against them. Thus illiteracy is promoted and constitutes a serious problem. Of adult epileptics it was found that only 2% had achieved a higher education.

Among the inhabitants within the age range capable of remunerative work (20 to 69) are 50,000 epileptics who are "universally rejected" by industry although the League estimates that 80% of these would be capable of regular work. "In Peru 72,000 socially able epileptics are unfairly deprived of education and work" and constitute a huge unproductive segment of the population and an economic burden to the country whose economic status is none too secure.

There is as yet "no specialized center of medical service for the treatment of epileptics. The poor epileptics apply to the dispensaries of the Sociedad Beneficencia, among other neuropsychiatric patients, where they are provided only with pheno-

barbital and bromides. Modern antiepileptic medicines cannot be provided due to the high prices, therefore treatment is inadequate. Only a small minority, which we calculate forms 2-3% of the patients, is benefited by modern methods. There are no centers for the study of epilepsy nor stimulus to research."

The President of the League is also seeking to secure legislation which will correct

the unfortunate social and economic status of persons subject to epilepsy and provide for their educational, medical and occupational needs in accordance with modern scientific knowledge of this disability.

In our neighbor country to the south epilepsy is indeed a major public health problem and the Peruvian League deserves great credit for the courageous struggle it is carrying on against heavy odds.

CASE HISTORY

Because "together" is the great central word of human life, no education can be rounded or comprehensive which does not involve a good all-around acquaintance with men and women of all sorts and conditions. Because this is so, biography, if it be well written, is agreeable and attractive. Indeed, a good novel succeeds if the author knows how to make it seem a good biography; or you can say the same thing backwards—That a good biography is as interesting as a good novel.

—EDWARD EVERETT HALE

In fact many of the old "Memoirs," purporting to be autobiographies were aptly characterised and described in the *Tatler* as novels.

THE PLATFORM

All that is necessary to raise a piece of imbecility into what the mob regards as a piece of profundity is to lift it off the floor and put it on a platform. Half the things that are said from a pulpit or rostrum or stage would get their spokesmen the bum's rush if they enunciated them five feet nearer the sea level.

—H. L. MENCKEN

CORRESPONDENCE

PSYCHIATROGENIC ILLNESS

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY :

SIR : Dr. Chapman, in his important paper, "Psychiatrogenic Illness," draws timely attention to the dangers of an indiscriminate and unthinking psychiatric therapy.

Many experienced practitioners have reported dire results (psychosis, delinquency or deterioration) of psychoanalysis applied to unsuited cases or in an unskilled manner. Freud himself recommended a three-week trial analysis before actually accepting them for treatment. As I tried to show (Psychiat. Quart., April 1958), it has not as yet been substantiated that insight therapy gets necessarily better results than other forms of treatment, or even of leaving the patient untreated.

Since results of psychotherapy have not as yet been scrutinized as they would in other medical specialties, we should carefully weigh the sacrifices in time and money, the possible family, social and other disadvantages, before embarking on any prolonged course of treatment. It is not just a question of deciding on treatment or not, but on being able to modify the treatment according to the needs of the patient, to have sufficient clinical judgment to observe incipient deteriorations, and know how to counter them.

Planned, elastic, patient centred, situation conscious, family and community oriented therapy, rather than method dominated, one track mentality, is needed.

Melitta Schmideberg, M.D.,
New York, N. Y.

ORDINAL POSITION IN THE FAMILY

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY :

SIR : I would like to comment on the significance of ordinal position in the family which has been touched upon in the paper by Ziegler, *et al.* in your April issue.

There have been no consistent findings in the literature on this aspect of personality development since Goodenough and Leahy (Pedagog. Sem. 34 : 45, 1927) published one of the earliest surveys in this field. The oldest, the middle and the youngest sibling has each, in turn, received special emphasis. Commenting on this, Harold Jones (in Murchinson C. : Handbook of Child Psychology, Clark University Press, 1933) cautioned that disagreement among psychoanalysts concerning birth order characteristics is in no sense greater than the disparities in statistical studies. He pointed out that a child's reaction to his own family setting may vary in an extremely complex manner and went so far as to urge that

any attempt to propose an emotional or motivational significance for birth rank itself may serve merely to obscure the observation of diverse and sometimes opposing factors.

More recently Helen Koch (J. Genet. Psychol. 88 : 231, 1956 ; Psychol. Monogr. 70, 1956) concluded from a most careful series of investigations that there is no ground for any sweeping generalizations about the effects of birth order on child characteristics and attitudes. We have investigated this problem in a group of adult schizophrenics (Science, 128 : 30, 1958) using a more controlled statistical design and have also in this disease found no ordinal position which would carry specific vulnerability.

Hanus J. Grosz, M.D.,
Postdoctoral Fellow,
Department of Medicine (Neurology)
Albert Einstein College of Medicine,
New York, N. Y.

CRITERIA FOR RESEARCH

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY :

SIR : You know, of course, that an awareness of research principles and methods is necessary in order to ascribe appropriate meaning to the wealth of psychological literature being published today. Therefore, the following findings and observations may be of interest to you and others.

This report comments on a systematic and rather thorough evaluation of the research methodology employed in the non-theoretical papers presented in the 6 leading psychiatric or psychological journals of 1958 as observed by Drs. Caruso, Subias, Vecozols, Vermeulen and myself during the series of informal seminars at the Columbia Psychiatric Institute and Hospital.

In this study the total field was pursued with extensive discussion on selected individual papers. This seminar, under the leadership of Dr. Benjamin Pasamanick, was the last of a series of three. The preceding two were concerned with the more basic fundamentals of research methodology and statistics.

We chose to make a total count of the research and theoretical papers. Of the former, we noted those with and without control. Those with controls were adjudged adequate or inadequate; the adequately controlled studies were observed in respect to the statistics used and whether or not the conclusions were justified.

Individual members of the group reported two papers, which were examined extensively, as a guide for the total evaluation. The criteria used were as follows :

1. The *hypothesis* : Was it formulated prior to the research ? Was it related to or derived from a body of theory ? Were the factors required for acceptance or rejection clearly stipulated ? Did it seem conceptually clear ? Was it testable ?

2. *Assumptions* implicit or explicit were sought, particularly the subtly included ones.

3. The *form* of the research must be explicit such as the internal factors of technique, sampling, design, controls, and analysis, as well as the external factors of size, objectivity, and reliability.

4. The *conclusions* were questioned in terms of the degree to which they were justified.

5. *Generalizations and interpretations* were scrutinized for validity.

Of almost 500 papers examined, nearly two-thirds were superficially categorized as research investigation ; yet, about one-third of these were completely without controls. Of those purporting to be controlled, approximately 75% were actually adjudged to employ adequate or appropriate controls. The group of suitably-controlled studies was felt to have valid conclusions in 75% of the cases and the presence of seemingly good and reliable statistics in upwards of 90% of the studies. Is it possible then that the final result shows that good and adequate research is present in only one-third of the research papers ?

The implications are fairly obvious and immediately somewhat disillusioning. In other words, perhaps not all those who say, "Lo, Lo, this is research ; come and see it !," are actually entitled response to their pompous command. One may quite rightly be dismayed at the common practice of reading only the conclusions and/or summary ; and yet, this represents one cause for the wide dissemination of truly unscientific material.

The results of our study immediately impress one with the need for journal editors to check an ever-increasing backlog of investigation flooding our academic attention. These investigations we are forced to view with increasing skepticism and uncertainty which require us to wait until the slow moving test of time establishes it, or the wheels of progress bring it into obscurity by sheer necessity of an individual's inability to encompass so much, whether of merit or not.

Conclusions though warranted should not, then, become too widely generalized, but open to replication in the process of its acceptance and application in other areas. We recognize that theoretical observations admittedly are important and need not feel challenged by this emphasis on research.

First of all, research methodology should

be an integral part of medical school education and certainly a part of the residency program. Only with this training can the reader intelligently be aware of the research processes and techniques involved as a basis for his individual acceptance or rejection.

Secondly, the editors of these journals must be reminded of their responsibility for a high degree of selectivity relative to papers sent in for publication, exercising

caution toward those papers in which the hypothesis is not clearly tested by adequately controlled uses of the scientific method, even though the mechanics of the research are sound.

These are my observations. Are there other ways this problem can be faced effectively?

Walter D. Hofmann, M.D.,
Division of Correction,
Columbus, Ohio.

AUTHORITY

The need for authority is a constant need of man. For it is the need for principles that are both stable enough and flexible enough to give direction to the processes of living in its vicissitudes and uncertainties . . . The underlying problem of recent centuries is the question of whether and how scientific method, which is the method of intelligence in experimental action, can provide the authority that earlier centuries sought in fixed dogmas. The conflict of science and religion is one phase of this conflict.

—JOHN DEWEY

THERE BUT BY THE GRACE OF GOD

One has only to grow older to become more tolerant. I see no fault that I might not have committed myself.

—GOETHE

SELF

In our present form of human consciousness the true self of any individual man is not a datum, but an ideal.

—JOSIAH ROYCE

NEWS AND NOTES

A GUIDE TO COMMUNITIES IN THE ESTABLISHMENT AND OPERATION OF PSYCHIATRIC CLINICS.—Of interest to individuals in the clinical professions and community groups is this new 309-page volume issued by the New York State Department of Mental Hygiene. The book answers numerous practical questions which confront those interested in setting up community psychiatric clinics. Attention is given to choice of auspices, cost, equipment, personnel, policy, and administration. Appendix material includes illustrative forms and guides, budgets, fee scales, as well as copies of the laws, regulations, and official documents pertaining to clinics.

The authors are Luther E. Woodward, Ph.D., and Winifred W. Arrington, M.S.S. Jesse E. Crampton contributed illustrative materials.

The book may be ordered through the Division of Community Services, New York State Department of Mental Hygiene, 240 State Street, Albany, N. Y., at \$2.00 per copy.

THE AMERICAN NEUROLOGICAL ASSOCIATION.—At the 85th annual meeting of the Association held in Boston, Mass., June 13-15, 1960, the following officers were elected for the year 1960-61: President, Harold G. Wolff; President-Elect, James L. O'Leary; 1st Vice-President, Harry M. Zimmerman; 2nd Vice-President, Raymond D. Adams; Secretary-Treasurer, Melvin D. Yahr; Assistant Secretary, Clark Millikan; Editor of Transactions, Melvin D. Yahr.

Dr. Derek Denny-Brown was elected to the council for 5 years and Dr. George A. Schumacher for 2 years. Dr. Augustus Rose was appointed representative to the American Board of Psychiatry and Neurology for 4 years, and Dr. J. Lawrence Pool was appointed as representative to the American Board of Neurological Surgery for 6 years.

Newly elected members 1960:

Active: Richard G. Berry, Christian Herrmann, Jr., Charles M. Luttrell, Clark T. Randt, Joseph G. Rushton, Robert D. Teasdale, John Nardini, Peritz Scheinberg, Alex-

ander Silverstein. Associate: Stanley M. Aronson, Juan M. Taveras, Hans-Lukas Teuber. Corresponding: Shibanosuke Katsuki. Honorary: Philip Bard, John F. Fulton, Sir Russell Brain.

Total registration was 629.

The 86th annual meeting will be held June 12-14, 1961, at the Claridge Hotel in Atlantic City, N. J.

DR. HENRY W. MILLER.—A Life Fellow of the American Psychiatric Association, Dr. Miller died at his home in Brewster, N. Y., June 22, 1960, aged 86. He was a graduate of the University of Toronto (1895) and spent most of his professional life in the United States. At one time he was clinical director of Saint Elizabeth's Hospital, Washington, D. C., afterward Superintendent of Maine State Hospital at Augusta. From 1914 to 1946 he was owner-superintendent of Mountainside Farm, a private mental institution at Brewster, N. Y.

From 1929 to 1949 Dr. Miller was associated with the College of P. & S., Columbia University, and in 1935 became associate attending Neurologist at Vanderbilt Clinic.

He had earlier served on the staffs of several mental hospitals in Massachusetts and Illinois.

ACADEMY OF PSYCHOANALYSIS.—Frances S. Arkin, M.D., one of the founders of the first psychoanalytic institute in this country connected with a medical school, was elected President of The Academy of Psychoanalysis for 1960-61. Other officers are: President-Elect, Roy R. Grinker, M.D.; Secretary, Joseph H. Merin, M.D.; Treasurer, John L. Schimel, M.D., and the following Trustees who will serve three year terms: Donald D. Jackson, M.D., May E. Romm, M.D., and Leon Salzman, M.D. The other officers of The Academy are: Past-President, John A. P. Millet, M.D.; Trustees: Nathan W. Ackerman, M.D., Ralph M. Crowley, M.D., Alexander Reid Martin, M.D., Leon J. Saul, M.D., and Natalie Shainess, M.D.

The mid-winter meeting of The Academy of Psychoanalysis will be held on Dec. 10 and 11, 1960, at the Hotel Biltmore in New York City. A symposium on values will be held on Dec. 10. 1. "Values, Truth and Psychoanalysis," by John R. Reid, M.D. 2. "Values, Maturation and Health," by A. H. Maslow, Ph.D. 3. Value Differences Between Patient and Psychoanalyst," by Janet Mackenzie Rioch, M.D. 4. "Values, Identity and Psychoanalysis," by Marianne H. Eckardt, M.D.

Inquiries may be addressed to Joseph H. Merin, M.D., Secretary, The Academy of Psychoanalysis, 125 East 65th Street, New York 21, N. Y.

NATIONAL BOARD OF MEDICAL EXAMINERS SETS UP SEPARATE EXAMINATION IN PSYCHIATRY.—On recommendation of a special *ad hoc* committee, chaired by Dr. Herbert Gaskill, professor of psychiatry, University of Colorado School of Medicine, the National Board of Examiners has decided to hold a separate examination in psychiatry, beginning with the Part II examination in April 1961. This places psychiatry on a par with medicine, surgery, pediatrics, obstetrics, gynecology, preventive medicine and public health in this examination. Previously, psychiatry was covered by relatively few questions in the medical test.

In his presidential address, Dr. Malamud referred to this move as "a very important development in the process of integrating psychiatry within medical education, with a beneficial impact on both."

EASTERN PSYCHIATRIC RESEARCH ASSOCIATION.—The following officers were elected at the June meeting of the Association. They will take office during the Annual meeting to be held at the Waldorf-Astoria Hotel, November 4-5, 1960.

President, Charles Buckman, M.D.; President-Elect, William Malamud, M.D.; 1st Vice-President, Emerick Friedman, M.D.; 2nd Vice-President, William Furst, M.D.; Secretary-Treasurer, David J. Impastato, M.D.; Asst. Secretary-Treasurer, Albert Browne-Mayers, M.D.; Councillors, William B. Terhune, M.D., Wilfred Dorfman, M.D., Robert E. Arnot, M.D.

N. Y. STATE PSYCHIATRIC SERVICES 1955-1960.—Commissioner Hoch, reporting to Governor Rockefeller makes a striking comparison of state hospital statistics of 1960 with those of 1955. Up to the latter year there had been a constant annual increase in resident population, averaging in recent years 2,000 patients. Had this annual increase continued, it is estimated that the 1960 hospital population would have exceeded that of 1955 by 10,000 patients. Instead there was a decrease of some 5,000 patients.

In striking contrast with these notable figures, there were 5,000 more patients admitted in 1960 than in 1955.

During the 5-year period the average hospital residence fell from 8 months to 6 months, and the discharge rate increased by 40%.

DISTRICT BRANCHES PUBLICATION 1.—Edited by Jacques S. Gottlieb, M.D., and Garfield Tournay, M.D., the 328-page volume contains the scientific papers and discussions which were presented at the Divisional Meeting, Midwest Area Branches of the APA, in Detroit, October 29-31, 1959. It is the first of a proposed series of publications that will report the proceedings of Divisional Meetings.

At the Detroit meeting the Academic Address, "New Horizons in Psychiatry" was given by William Malamud, M.D., President of the APA.

The Hon. G. Mennen Williams, Governor of the State of Michigan, gave an address titled "The Role of Government in Mental Health."

Orders should be addressed to: District Branches Publications, American Psychiatric Association, 1700 Eighteenth Street, N. W., Washington 9, D. C. Copies are \$3.00 each.

AMERICAN ASSOCIATION OF NEUROPATHOLOGISTS.—At the 36th annual meeting of the American Association of Neuropathologists, the following members were elected to serve as officers for the current year: President, Richard Richter, M.D., Chicago, Ill.; President-Elect, David Cowen, M.D., New York, N. Y.; Vice-President, Karl Neuberger, M.D., Denver, Col.; Secretary-

Treasurer, Leon Roizin, M.D., New York, N. Y.; Ass't Secretary-Treasurer, Irwin Feigin, M.D., New York, N. Y.

MEDICAL WRITERS' MEETING.—The 17th annual meeting of the American Medical Writers' Association will be held at the Hotel Morrison, Chicago, Sept. 30-Oct. 1, 1960. Dr. Austin Smith, President, Pharmaceutical Manufacturers Ass'n and former Editor, J.A.M.A., will preside.

The program Oct. 1 will be a "Conference on Medical Communications." Dr. Walter Kahoe, Director, Medical Dept., J. B. Lippincott Co., will preside at the morning session, which will be devoted to the publishing and editing aspects of medical writing. Dr. Justus J. Schifferes, Director, Health Education Council, will preside at the afternoon session, which will be devoted to the technique of medical writing.

At the banquet Sept. 30 several awards will be granted, including those in medical journalism, and to medical periodicals for distinguished service in journalism.

NEW CIVIL DEFENSE NATIONAL HEALTH PLAN.—A National Health Plan, issued by the Government and designed as an annex to the broader National Plan for Civil Defense and Defense Mobilization outlines the areas of responsibility, organization, functions and programs for health services under national emergency conditions including a survival and recovery period from a direct attack. Its major premise is the responsibility of individuals and of professional associations in health fields to take an active part in civil defense and defense mobilization and training in their communities. Assuming the disruption of health services and severe shortages of medical supplies and facilities, the Health Annex outlines ways of dealing with these problems. Of primary importance is the necessity for community members to be self-sufficient for a short time after an attack until help reaches them and the Plan suggests such preparedness measures as training in first aid and various

ways of meeting shortages. Under the Plan, while responsibility for health resources acquisition, management and control rests with the Office of Civil and Defense Mobilization, the primary responsibility in the Federal government for civil defense health and mobilization programs is assigned to the Department of Health, Education and Welfare.

THE AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY, INC.—The following candidates were certified as Diplomates in Child Psychiatry by this Board and its Committee on Certification in Child Psychiatry, April 1960.

James Milton Bell, CANAAN, N. Y.
Norman Ralph Bernstein, Boston, MASS.
A. Ferdinand Bonan, Philadelphia, Pa.
John Armistead Boston, Jr., Austin, TEX.
Jack Emile Chappuis, New Orleans, LA.
Walter F. Char, Philadelphia, Pa.
Richard Lawrence Cohen, West Chester, Pa.
Theodore Benjamin Cohen, Philadelphia, Pa.
Albert Victor Cuner, Buffalo, N. Y.
Carlo P. DeAnronio, Sherman Oaks, Calif.
Chester R. Dietz, Wilmington, Del.
Leon Eisenberg, Baltimore, Md.
Aaron H. Esman, New York, N. Y.
Stuart McIntyre Finch, Ann Arbor, Mich.
Joseph Fischhoff, Detroit, Mich.
Barbara Fish, New York, N. Y.
Robert B. Forman, Topeka, Kan.
Harry George Gianakon, Philadelphia, Pa.
Alfred J. Gianascol, San Francisco, Calif.
Arthur E. Gillman, New York, N. Y.
Joseph Martin Green, Madison, Wisc.
Robert L. Greenlee, Fort Wayne, Ind.
Harold Joseph Harris, Chapel Hill, N. C.
Melvin S. Heller, Philadelphia, Pa.
Richmond Holder, Boston, Mass.
Leonard Hollander, Bronx, N. Y.
Albert S. Hopkins, Forest Hills, N. Y.
Doris M. Hunter, Pittsburgh, Pa.
Jean D. Jameson, New York, N. Y.
Jacob Philip Kahn, San Francisco, Calif.
Harris Elliott Karowe, Schenectady, N. Y.
Michael Theodore Khlenzos, San Francisco, Calif.
Elizabeth Kleinberger, New York, N. Y.
LeRoy F. Kurlander, San Diego, Calif.
James Joseph Lawton, Jr., Minneapolis, Minn.
Edward Mortimer Lirin, Rochester, Minn.
Irwin M. Marcus, New Orleans, La.
John Tarlton Morrow, Jr., Topeka, Kan.
Byron Leon Nestor, Berkeley, Calif.
Joseph D. Noshpitz, Bethesda, Md.
Morris Parmet, Flemington, N. J.
Robert C. Prall, Philadelphia, Pa.
Francis T. Rafferty, Salt Lake City, Utah
John Belvin Reinhart, Pittsburgh, Pa.
Bertram Aaron Ruttenberg, Villanova, Pa.
Calvin Frederick Seelage, Ardmore, Pa.
Marvin I. Shapiro, Pittsburgh, Pa.
Malcolm Richard Sills, Worcester, Mass.
Archie Aaron Silver, New York, N. Y.
James E. Simmons, Indianapolis, Ind.
Meyer Sonis, Philadelphia, Pa.
James Neil Sussex, Birmingham, Ala.
Charles R. Swift, Trenton, N. J.
David S. Thorsen, St. Paul, Minn.
Jack Vance Wallinga, Minneapolis, Minn.
Richard Storer Ward, New York, N. Y.
Morris Weiss, Detroit, Mich.
Virginia Nichols Wilking, New York, N. Y.
Henry H. Work, Los Angeles, Calif.
Stephen C. Wright, Miami, Fla.
Thomas S. Wright, Abington, Pa.
Howard Lee Wylie, Pittsburgh, Pa.

BOOK REVIEWS

SOCIAL SCIENCE AND SOCIAL PATHOLOGY. By Barbara Wootton. (London: George Allen & Unwin, 1959, pp. 400. \$7.75.)

Barbara Wootton is an exceptional figure on the British intellectual scene, combining as she does the critical abilities of an academic social scientist, the practical experience of a magistrate and the authority of a peeress of the realm. She enjoys a well-merited reputation for clear thinking and blunt speaking and her gifts of self expression are such as to have mollified the most critical reviewers. Ten years ago her *Testament for Social Science* set out the credo of a rationalist who maintained that the social sciences should and could be applied scientifically in the solution of many social and political problems. Since the publication of that book Lady Wootton has given intimations of an ominous disquiet as she has become more familiar with the field of social pathology. These occasional rumbles can now be seen to have presaged the thunderclap of her present volume in which it is apparent that she is profoundly disturbed by what she has come to know.

The scope of *Social Science and Social Pathology* is considerable, though the aim of the book is explicitly limited to "an assessment of the results of researches already undertaken by others" and its purpose is ostensibly no more than "to stop and ask ourselves where we are going and why." Part I purports to survey "the nature and extent of social pathology in contemporary Britain, reviews the findings of a number of studies, and attempts both to assess the findings relating to several of the currently most popular hypotheses and to estimate the success of some experiments in prediction." Part II, which will probably be of most immediate interest to readers of this journal, deals with "... change in contemporary attitudes towards unwelcome deviants, and in particular with the tremendous revolution both in the world at large and amongst professional social workers in particular, which is due to the rise of psychiatry." Part III is concerned with the conclusions "... relevant, not only to research in social pathology but to the social sciences in general." There is also an interesting and valuable appendix on professionalism in social work done by one of the two assistants who have helped compile the material on which the work is based.

At what conclusions does the author arrive?

To the chagrin of the enthusiast they are that "... the chief effect of precise investigations into questions of social pathology has been to undermine the credibility of virtually all the current myths," and that "such destructive activity is likely for some time to come to be the main preoccupation of the social sciences." The bulk of the volume is devoted to a detailed and mythoclastic survey of current viewpoints and the studies on which they are based. One after another the windy claims of the eugenicists, the woolly theories of criminal behaviour, the fashionable jeremiads on the theme of maternal separation and the ritualism of psychiatric social work are despatched with exhilarating efficiency in the best English empirical tradition. In full sail Lady Wootton is a splendid sight and the text abounds with memorable and incisive thrusts as her arguments gather force. Three examples must suffice: "the psychiatric approach to social work makes it possible simultaneously to disown and to retain the attitude of superior wisdom and insight traditionally adopted by the rich towards the poor"; "the lamentable arrogance of the language in which contemporary social workers describe their activities is not generally matched by the work they actually do: otherwise it is hardly credible that they would not constantly get their faces slapped"; "always it is easier to put up a clinic than to pull down a slum."

It is probable that few workers in the professional groups which have been organised to tackle socio-medical problems will be able to avoid a re-examination of the foundations of their beliefs and activities after reading this book. It is also probable that some of them will be upset by it. Lady Wootton has delivered douches of cold water to a number of over-heated topics and this procedure can be uncomfortable even if its medicinal value be indisputable. When she provides a modicum of consolation it sparkles in the ashes, but many psychiatrists, for example, will feel inadequately rewarded to learn that "whatever may be thought of the scientific pretensions of psychiatry, there can be no question as to its humanising effect upon the treatment of socially refractory persons." Perhaps Lady Wootton's most valuable positive contribution is her searching discussion of the need for the rescue of moral values from contemporary enemies, for "medical science," as she says, "walks in at the door as moral judgment flies out of the

window." The issues of criminal responsibility open the way to a full examination of this thesis and we are forcibly reminded of the fact that "in psychiatrically orientated social work . . . just as in psychotherapy itself, moral judgments may lie concealed in what appears to be the neutral language of science or medicine."

There are, to be sure, a number of points at which to cavil. Many critics would dispute the author's view that ". . . it is in their role as the handmaidens of practical decision that the social sciences can shine most brightly." Others might object that her arguments against drawing a distinction between causation and prediction are suspect or that her faith in prediction tables is premature. Lady Wootton does little to indicate that the flaws in many of the studies which she castigates are clearly recognised by a growing number of workers in the field of social psychiatry, especially those who are familiar with the basis of epidemiological theory. She is also not above quoting out of context on occasion. Nonetheless, such defects do not detract substantially from the overall value of a book which will so certainly stimulate its readers, some to admiration, others to anger. Lady Wootton has performed a valuable service for which we must all be grateful. We shall be in her debt still further if she will now go on to develop suggestions for reconstruction after the storm.

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THE SYMPTOM AS COMMUNICATION IN SCHIZOPHRENIA. Edited by Lieutenant Colonel Kenneth L. Artiss MC. (New York: Grune and Stratton, 1959, pp. 233. \$5.75.)

DIE BEGINNENDE SCHIZOPHRENIE. By K. Conrad. (Stuttgart: Georg Thieme, 1958, pp. 165. \$4.10.)

In recent years the problem of communication with schizophrenics has attracted a considerable amount of attention. The reports presented in the book entitled *The Symptom as Communication in Schizophrenia* represent clinical research in the problem of schizophrenia undertaken in a military setting where there are aspects unique to that setting.

Following an introduction by Dr. David McK. Rioch, Director of the Division of Neuropsychiatry, Walter Reed Army Institute of Research, there are 7 sections by 5 contributors (K. L. Artiss, B. L. Bushard, D. H. Marlowe, K. T. Erickson, and R. H. Rowe).

The section discussing "the symptom as an informative and communicative device" sets forth the concept of the symptom as a message with an anticipated reply. The "group" is defined and interaction explored. In an interdisciplinary study, psychiatry, social work, sociology and anthropology have been brought together, the object being to clarify observations concerning behavior.

The section entitled "the symptom in a formal organization" deals with the problem of the management of schizophrenia in the U. S. Army. The Army treatment of neurosis has been relatively successful in contrast to the results with schizophrenia. Schizophrenia is the predominant psychosis in the Army. It constitutes a high percentage of psychotic disorders. Moreover, "of all disability discharges for non-battle injuries and disease, 24.7% are based on schizophrenia." The research here "strives for a fuller understanding of the facts in the life history of soldiers who develop schizophrenic symptoms" and to "trace the development of such symptoms from their earliest appearance, through the various forms in which they manifest themselves," and the various circumstances that brought the patient to medical attention. One principal objective is to develop new techniques for rehabilitation.

The third section presents the "Methodology of the Study," describing home and community studies, tape recorded squad interviews, Fiedler Assumed Similarity Studies, sociometrics, and ward observation procedures. There are 5 general areas of investigation as outlined by the author (Bushard). 1. The background investigation: a study of family, school, community and work adjustment. 2. The military adjustment prior to hospitalization. 3. The examination prior to and immediately following initial hospitalization. 4. Observations during further hospitalization and treatment. 5. Follow-up of adjustment following release from the hospital.

In sections 4 and 5 the problems arising in the basic training are discussed. The anxiety produced during the first 4 weeks of training is explored and the group methods of dealing with it are described. The schizophrenic reactions in basic training are of particular importance for study, as the findings have revealed dominant behavior patterns. Schizophrenics are detected early by their associates because of poor performance, and odd behavior.

In the sixth section the significance of the symptom in the past history of the patient is discussed. Field studies in the home and community are reported, as approached by a num-

ber of new successful techniques which provide evidence from school and community adjustment indicating a long history characterizing schizophrenic disorders. The seventh and last part emphasizes the value of the symptom during treatment. Here are given an account of the detailed studies with results obtained from "milieu therapy" ward.

As a whole, this book presents an interesting and informative account of search and research objectives and results important to psychiatric workers everywhere.

The monograph in German entitled *Die Beginnende Schizophrenie* by Prof. Dr. K. Conrad, Director of the Neurological Clinic of the University of Göttingen, presents a study of the subject from the viewpoint of gestalt analysis. Following a discussion of the present situation with regard to the knowledge of the schizophrenic disorder, the author presents, in some detail, an example case of Shube's schizophrenia, including the therapy and work plan.

The gestalt analysis and interpretation of schizophrenic manifestations includes the withdrawal from reality phenomena, the fantasies, the initial depression, the projection mechanisms and misinterpretations, disorders of perception of space and time, the feelings of estrangement and those of omnipotence are brought into the total gestalt picture. During this phase there is also considered the thought spreading, hallucinated voices, odd bodily sensations and the general structure of schizophrenic thought.

The catatonic psychosis phase with its special features, the consolidation and end states achieved are well described. The main text is concluded with a description of the courses of the clinical types (The "Shube" and the "process"). An appendix presents a brief description of non-schizophrenic delusion formations and also a discussion of the case of Rene (Schehaye). The text is liberally illustrated by case notes referring to symptoms and management. Students of gestalt psychology will be interested in these applications of the theory.

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A HISTORY OF NEUROLOGY. By Walter Riese.
(New York: MD Publications Inc., 1958,
pp. 223. \$4.00)

The book under review is largely a discursive philosophical treatise. The author discusses general neurological ideas and pays comparatively little heed to structure and func-

tion, the scientific bases of neurology. The 9 chapters in the book deal successively with the history of concepts: The Nervous Impulse, Reflex Action, The Doctrine of Cerebral Localization, Rediscovery of the Whole, Ancient and Modern Pain in Neurology, and The Histories of Diagnosis, Prognosis and Therapy in Neurology. Of the last 3, Diagnosis receives 10 pages, Prognosis 2 and Therapy 7. It is not clear what the chapter on The Rediscovery of the "Whole" seeks to convey and what link there is between Galen's speculations and Monakow's theory of diaschisis. Nor is it clear what is meant by the Doctrine of Cerebral Localization when so little is said on neuroanatomy, neurophysiology and clinical medicine.

It is a common failing of enthusiastic historians to attribute to ancient authors knowledge of which they were innocent and to credit them with scientific insight of which they were obviously bereft. Clearly, hunches and guesses, however interesting, are not scientifically proved facts. It is true, for instance, that Erasistratus (4th century B.C.) alluded vaguely to "nerves" of motion and sensation, but like others he believed the nerves were tubes, which were confused with tendons, and it was not till 22 centuries later that Bell and Megendie provided scientific proof. Much too much credit is given to Galen and Rufus of Ephesus and Plato and Aristotle, who, like many philosophers throughout the ages, retarded knowledge with metaphysical speculation.

Although the author occasionally puts a quotation mark on the word "soul," the repeated introduction of a religious concept in the scientific study of neurology arouses wonder and doubt. Despite the lengthy bibliography of 175 references, 22 of them to the author, a host of important ones are left out. Most of the anatomists, neurosurgeons and clinicians who created the modern scientific specialty are not mentioned, at most barely alluded to. We are told that it is one generation since Westphal. Actually it is three generations. He became the first professor of neurology in a German university in 1870.

It is a strange fact that of all medical specialties neurology alone has failed to receive the attention of medical historians which it so richly deserves. Ancient authors have received attention, so have a number of neurologists of fame, and there are a few monographs sketching short periods, but there are no full length histories, aside from the reviewer's "Brief History of Neurology," included in his Textbook. This reviewer anticipated hopefully that the

present volume of the scholarly author would fill the need. Regretfully, the history of philosophical concepts is not a history of neurology.

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CAN MAN BE MODIFIED? By Jean Rostand.
(New York: Basic Books, Inc., 1959,
pp. 105. \$3.00.)

There is magic in the name Rostand. Did not Rostand, *père*, till then a youthful poet of no great celebrity, create the immortal *Cyrano de Bergerac*? And dedicate it in such exquisite phrase to the man for whom it was written, the great French actor Coquelin:

*C'est à l'âme de Cyrano que je voulais
dédier ce poème*

*Mais puisqu'elle a passé en vous, CO-
QUELIN, c'est à vous que je le dédie*

And now Rostand, *fil*, in this small volume carries the magic into the field of experimental biology, much of it his own work. Reminding us that fatherless sea-urchins were developed chemically in the laboratory half a century ago, he tells us that in the recent past the permanent secretary of the Académie des Sciences "referred quite calmly to the prospect of solitary generation for human beings." By suitably doubling the chromosomes in the eggs of frogs, not only parthenogenesis but androgenesis is possible. Through the process of tissue culture experiments in physical immortality are going on, and "human propagation by cuttings" should make it possible "to create as many identical individuals as might be desired . . . all of them real twins."

What a boon to war makers!

The miracles of contemporary experimental biology are many and the author gives a number of the startling if not frightening examples of the transformations man can bring about in various forms of life, even the human species. Speaking of both animals and plants, he says: "We can produce *artificial mutations* and cause new races of living creatures to appear on earth." But in spite of all these marvels the fundamental problem of life itself has not been solved,—not yet. And we must not be too forward with our prophecies, hopes or fears. Here Rostand appositely quotes the great Claude Bernard, speaking of living organisms: "We must not read into them either a chemical retort or a soul: *we must read into them what is there.*"

But the future possibilities of biology seem almost limitless. "Biology can, in fact, set to work to modify the organ of thought itself—the living brain" and thus conceivably produce

supermen. Accordingly "it is plain that, from progress to progress, from one advance to another, science may go on expanding indefinitely."

The author pays his respects to Aldous Huxley's *Brave New World* (1931). Ectogenesis, he says, is not altogether a mad dream. "This vision of the future is based on a precise knowledge of the present." Eugenic selection also comes under consideration. "Until human selection has been tried, nobody has the right to assign an upper limit to man." It was Goethe, Rostand reminds us, who in *Faust* first used the word *Übermensch* (incidentally it was the devil who spoke it—and in derision) that Nietzsche made so much of.

Having outlined the miracles of science as applied to biology and specified the possibilities of the future—even the probabilities, Rostand in his concluding pages comes upon stumbling blocks. He asks the question: "Is the creation of such a superman desirable?" And he seems somewhat uncertain about answering in the affirmative. Taking note of the slow evolutionary process in nature which has left the contemporary human mind not essentially better than that of early mankind, he hesitates before "the idea of an evolution controlled and directed by man," although the science to which he has given his own life appears to lead that way. He gives audience to echoes from an anthropocentric medieval world. "Man," he says, "cannot help regarding himself as something sacred . . . as the highest and most precious thing on the planet . . . as that 'unique being' . . . which perhaps has not its like in the whole of the vast universe." This sounds perilously like the standpoint of the old ecclesiastical man who was the very center of the universe, around whom the sun and planets and the fixed stars revolved for his special welfare and delectation.

The reviewer found M. Rostand somewhat difficult to follow through these last pages. He seemed to consider seriously the artificial dichotomy between science and not-science and to pause before a sort of walled off transcendental world the scientist with his crude tools may not enter. He then considers a possible bridge between the two worlds, or as he puts it "between science and conscience," namely the science of mind, particularly as represented by psychoanalysis. By this means he suggests an all-embracing love might be introduced into the world and lead to "a lofty 'scientific morality'" ('love' remains undefined). But leaving romance aside for a moment, one seems to remember that Dewey commented critically on the unfortunate ob-

stacle to free enquiry of halting before a restricted area of human experience beyond the reach of science. After all a transcendental world, whatever else it is, can only be known as a part of human experience just as the weather is and should be examined with a free mind by applying the same principles of scientific enquiry.

Despite what may seem like an anticlimax in the final section of this remarkable book, we may be sure that Rostand, the magician, will pursue his researches along his destined way leading to new miracles in the life of animals, not excluding the paragon of animals, in a braver new world, perhaps.

C. B. F.

THE MOTHERS OF SCHIZOPHRENIC PATIENTS.

By Yrjö Alanen. (Copenhagen: Ejnar Munksgaard, 1958, pp. 361.)

This is a most remarkable monograph reporting a study of 100 unselected schizophrenic patients and their mothers as well as 20 neurotic and 20 "normal" persons and their mothers. The author aims to clarify 3 questions: 1. What descriptive and psychodynamic traits can be discerned in the mothers of schizophrenic patients by means of interviews and the Rorschach tests? 2. What characteristics do the relationships of mothers to their children developing schizophrenia display in contrast with control cases? and 3. What conclusions can possibly be drawn as to the pathogenic role of the mother-child relationship in the development of schizophrenia? The author then proceeds to give in less than 100 pages a summary and critical review of schizophrenia research and of theories and studies aimed at clarification of etiology. This section alone is a remarkable achievement, a model of a concise, critical review of scientific and clinical material.

The schizophrenic study material is subdivided into 2 groups according to the European concept *i.e.*, patients with "process schizophrenia" (severe or unquestionable cases in American parlance) are treated as a separate group from those diagnosed as psychosis schizophreniformis (acute schizophrenic reaction, pseudoneurotic schizophrenia, *etc.* in American writings) and the material is further subdivided according to age of onset, and a small group of 5 schizophrenic patients is treated separately because of a pre-existing chronic organic illness. It may be giving the plot away by stating that the overall findings and conclusions of the author were not affected by this careful grouping of the patient

material. The author has given consideration in a separate chapter to the possible interpretation and formulation of his material from a viewpoint of heredity and genetics. But without attempting to arbitrate the case for or against hereditary influences in the development of schizophrenia, he emphasizes the "non-hereditary transmission of psychosis" brought about by the behavior and rearing techniques of a disturbed parent and the ensuing disturbed interaction between parent and the future patient. Although the study is limited to that of patient and mother, he does emphasize that in those 16 instances where the mother's personality was considered more or less normal there was a severely disturbed father who influenced the family environment adversely, at least for the patient-offspring. There are also a few data concerning the mother's particular problems during pregnancy with the patient and her attitudes towards him during early childhood, as compared with the mother's situation when non-schizophrenic siblings were born. Although this material is sparse, the author has shown how factors and data to explain the differential development of schizophrenic and non-schizophrenic children in the same family might be obtained and obtainable. Other data such as the incidence of psychosomatic illness in these 100 mothers, or the detailed configuration of the mother's personalities are of interest regardless of their significance to the main theme.

The techniques employed are those of interviewing and projective tests done independently, and the author carefully asserts the methodological limitations. In his conclusions he emphasizes which theories are not borne out by his findings rather than advancing new etiological hypotheses based on his findings. This monograph is essential to all students of schizophrenia.

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THE FIFTH MENTAL MEASUREMENTS YEAR-BOOK. Edited by Oscar K. Buros. (Highland Park, N. J.: The Gryphon Press, 1959, pp. 1292. \$22.50.)

The value of Buros' 8 volumes of tests and test books reviews has increased since his first annotated bibliography appeared in 1933, to the stage where now "The Buros" is the major, if not the only, comprehensive source of information for persons who use tests and test results. The present volume covers tests and tests books published since 1952, as well as

new critiques of tests previously reviewed. For a comprehensive coverage of tests and books on testing now being sold, the 1953, 1947 and 1941 publications are required as well. It is scarcely necessary to refer to the careful work that characterizes this series. Buros has uncovered more than 2200 Rorschach technique studies and articles alone! A glance at the list of reviewers will assure the reader that this job has been delegated to eminent specialists in each field, while the reviews themselves show that they have not taken their responsibilities lightly. The reader is advised to study the Preface carefully in order to familiarize himself with the organiza-

tion of the book before attempting to locate a reference, for, while the organization is simple, it is not immediately evident from the index listings. Books, for instance, are now reviewed in a section separate from the actual tests. With the continuing development, stricter control of design and distribution, and increasingly confusing number of tests available, the Buros yearbooks become reference requisites for clinics, institutions and research centers where psychological tests form part of the assessment program.

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NEW GERMAN PSYCHIATRICA AND PSYCHOLOGICA

HANS A. ILLING, Ph.D., Lds ANGELES, CAL.

DIE BEGINNENDE SCHIZOPHRENIE. By K. Conrad, M.D. (Stuttgart: Georg Thieme Verlag, 1959, pp. 165, DM 17.80—or Intercontinental Medical Book Corporation, New York. \$4.50.)

The present study aims to "continue a great past," the teaching of psychopathology by Jaspers and the "Heidelberg-School" (Wilmanns, Grubbe, K. Schneider, Mayer-Gross, Buerger-Prinz, et al.). The author feels that the Heidelberg School had come to a "dead-end," since it aimed to dissect the psyche into its basic elements and functions. The author coins two new phrases relating to schizophrenia: *apophaenie*, meaning the experience of the abnormal consciousness as it relates to values, and the *anastrophe*, the experience of the schizophrenic who feels that everything is centered around him. The author does not offer any "cure," but admits that certain "residues" remain.

DIE GRUNDLAGEN DER REHABILITATION IN DER BUNDESREPUBLIK DEUTSCHLAND. By Kurt-Alphons Jochheim, M.D. (Stuttgart: Georg Thieme Verlag, 1959, pp. 203, DM 24.00—or Intercontinental Medical Book Corporation, New York. \$5.70.)

This volume, one in a series of socio-medical monographs, describes first the development and trends of rehabilitative programs in America, England, France, Sweden, Holland, Austria, and Switzerland. After a few brief chapters on medical insurance, social security, and vocational counseling, the author discusses infant, child, and adolescent illnesses (epilepsy, mental deficiency, spasticism, paraplegic and

congenital illnesses) and illnesses of the adult years (tbc, cardiac, arthritic, neurological etiologies, and poliomyelitis), and closes with a chapter on the various health agencies in West Germany dealing with any or all of the rehabilitative aspects of these illnesses.

DAS MENSCHENBILD DER SEELENHEILKUNDE. By Victor E. Frankl, M.D. (Stuttgart: Hippokrates Verlag, 1959, pp. 128, DM 8, 50.)

This monograph consists of 3 lectures, which the author delivered at the University of Salzburg (Austria) in 1957. The informal lectures deal with a multitude of topics, such as the pros and cons of psychoanalysis (Frankl feels, for instance, that Freud's concept is "one-sided and incomplete" and, therefore, is a "half-truth more dangerous than a full-blown error"), the pathology of *der Zeitgeist*, of which the author says that *die kollektive Neurose der Menschheit laesst sich nicht ueberwinden* (the mass neuroses of mankind cannot be resolved), and philosophical and anthropological subjects, often taken from American literature.

KOERPERLICHE UND GEISTIGE EIGNUNG ZUM FUEHREN VON KRAFTFAHRZEUGEN BEI HIRN-VERLETZTEN. (Physical and Mental Ability of the Brain-Injured in Driving Automobiles.) By Artur Grossjahn, M. D. (Stuttgart: Georg Thieme Verlag, 1958, pp. 84, DM 7, 50—or Intercontinental Medical Book Corporation, New York. \$1.80.)

The present monograph is the outgrowth of a study of hundreds of persons whose brain was injured in automobile accidents during the last 5 years up to the conclusion of the study

in 1956. Of the 18 "results" drawn from this study, it seems that more "slightly" than "seriously" brain-injured patients were found; that the injuries to the body as a whole were more important than those to the brain alone; and that, "unconditionally," one third of all the brain-injured became "fully capacitated" to drive automobiles.

PSYCHOTHERAPIE. By D. Mueller-Hegemann. (Berlin: VEB Verlag Volk und Gesundheit, 1959, pp. 264, DM 24.00.)

The aim of the author is to provide a *Leitfaden*—a guide—for medical students and beginning medical practitioners in "psychotherapy." However, the author's own definition of psychotherapy, as compared with most European and American conceptions of it, seems to be dated. Thus his historical narrative demonstrates: "modern" times in the history of psychotherapy start with Mesmer and "end" with Pavlov, with a mention of Flugel, the non-medical analyst in England. Freud and his followers and dissenters receive only "honorable" mention, except that Freud's teachings are said to have contributed to the "ever-increasing gap between depth-psychology and traditional clinical medicine." When the author, for instance, discusses group psychotherapy, he seems to assume that nothing has been done before him, unless it be a Pavlovian type of "therapy," which, according to him, is "work-therapy!"

EIN MODERNER MYTHOS. VON DINGEN DIE AM HIMMEL GEGEHEN WERDEN. By C. G. Jung. (Zurich, Switzerland: Rascher-Verlag, 1958, pp. 112, Sfrs. 8.40, and its translation: **FLYING SAUCERS. A MODERN MYTH OF THINGS SEEN IN THE SKIES.** New York: Harcourt, Brace, 1959, pp. 185. \$3.95.)

The English translation has 3 advantages over the Swiss edition: it is cloth bound and richly illustrated, and carries a Preface written by Prof. Jung himself for the English translation. In it, Jung asserts that the question whether the Flying Saucers are "real" or a "mere fantasy product" is by no means settled yet. The purpose of his book is to examine both sides of the story. What are the saucers, if they are real? If they are imagination, why should the rumors of their existence persist? Prof. Jung has done some research into the Ufos (unidentified flying objects), in the course of which he was "suspected" of being a "believer" in their reality. He feels, however, that

the whole matter of the Ufos deserves the "psychologist's interest." And the book attempts to answer the question why it should be more desirable for saucers to exist than not.

DAS MAERCHEN UND DIE PHANTASIE DES KINDES. By Charlotte Buhler, Ph.D., and Josephine Bilz, M.D. (Munich: Johann Ambrosius Barth, 1958, pp. 111, DM 12.50.)

Dr. Buhler, who is presently clinical professor of psychiatry at the University of Southern California, first published this monograph in 1918. The present edition, however, is not merely a reprint of a monograph long out of print, but a discussion by Josephine Bilz, who examines the experiences and events of the fairy-tale from the point of view of depth psychology. In the Introduction, written by Hildegard Hetzer, M.D., Charlotte Buhler's applications to child psychology are evaluated, and both "reality" and *Wunder*—miracles—in fairy-tales are examined. All 3 authors are scholarly, and the monograph appears to be of immense value to the child psychologist and child psychiatrist.

DIE PSYCHOTHERAPIE DER GEGENWART. Edited by Erich Stern, M.D. (Zurich: Rascher-Verlag, 1959, pp. 474, Sfrs. 33.00.)

This compendium contains two sections, one on the main trends of modern psychotherapy, and the other on their application, *Grenzgebiete* (associate fields) and problems, with a summary of both sections by the editor.

The compendium is international in scope and international in the selection of its contributors, each one of them an authority in his *Richtung*. Thus Rudolf Dreikurs (Chicago) discusses Adler's Individual Psychology, Berthold Stokvis (Holland) elaborates on hypnosis, suggestibility, and relaxation-therapy, L. Gayral (France) discourses on narcoanalysis, Alfred Storch (Switzerland) on Existentialism, S. R. Slavson (New York) on group psychotherapy, and A. R. Bodenheimer and Christian Mueller (both of Switzerland), each in one paper, on psychotherapy with psychotics intrapaper and extrapaper. There is Prof. Heinrich Meng's excellent expose of "Psychiatrie" in *menschenoeconomischer Hinsicht*—socio-economic aspects,—a topic which Meng has pioneered in Europe for many years. All told, this volume appears to be a beautiful accomplishment of cross-fertilization of both hemispheres and, therefore, of great value for the comparative study of psychotherapeutic methods.

PSYCHIATRIE UND GESELLSCHAFT. ERGEBNISSE UND PROBLEME DER SOZIALPSYCHIATRIE. Edited by H. Ehrhardt, D. Ploog, and H. Stutte. (Berne, Switzerland: Verlag Hans Huber, 1959, pp. 320, Sfrs. 31.50. In U. S.: Intercontinental Medical Book Corporation, New York. \$7.50.)

The concept of "social" psychiatry (which originated in England and was "imported" here) finally is "invading" Continental Europe. The present volume should serve the "Cosmopolitan" and sophisticated professional reader all the better because, in part, some of the articles are written in English and French. Thus Frederick Redlich of Yale University writes on "Social Class, Culture and Schizophrenia," Oscar Diethelm of Cornell University and the New York Hospital on "Social Psychiatry in North America," J. R. Rees and Kenneth Soddy on "Mental Health and Mental Hygiene as International Tasks," Leo Kanner of the Johns Hopkins Hospital on "Parental Perfectionism as a Pathogenic Agent," (in German translation), E. Strauss of the V.A. Hospital in Lexington, Ky., on *Formen und Formen*, and George S. Stevenson on "Psychological Hygiene in the U. S." Other authors are from Germany, Austria, Switzerland, Holland, and France. The articles are divided into five main topics: psychiatry and the milieu, psychopathology of various etiologies (sex and sociology, psychoses, the dynamics of "group psychiatry," modern arts, etc.), psychiatry and psychohygiene, child psychiatry, crime and delinquency, and institutional psychiatry.

PSYCHIATRY AND THE CRIMINAL. By John M. McDonald, M.D. (Springfield: Charles C Thomas, 1957, pp. 227. \$5.50.)

A practical, systematic, and reasonably comprehensive book on forensic psychiatry is at hand, in "Psychiatry and the Criminal." Here are all the detail, illustrating examples, and inside tips which only a professional thoroughly familiar with the field can provide. Where to write for armed forces records, blood alcohol levels, case history outlines, intelligence classifications, and other frequently used information, are included, along with discussions of their significance and application. But this volume is no handbook, for it includes chapters on the origins of criminal behavior, tests for criminal responsibility, psychiatric examinations, the Ganser syndrome, narcoanalysis, amnesia, epilepsy, psychopaths, sex offenders, juveniles, psychological tests, witness stand techniques,

and treatment and punishment. Written with erudition and diversity, this material is organized into what should serve as the best teaching text in this field. The aim of the book, of providing a practical guide to psychiatric examination of suspected criminals, is so admirably achieved that the unavoidable limitations on depth of discussion are hardly noticeable. But by perceptive quotations, the author reminds us that there is more, much more, to be said.

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RECREATION ACTIVITIES FOR THE HANDICAPPED. By Frederick M. Chapman. (New York: The Ronald Press, 1960, pp. 309. \$5.75.)

The author has appropriately termed his book "practical." Part I outlines the need of the handicapped, in common with all people, for satisfying recreation activities, both in the community and in hospitals. Recreation needs are grouped according to age-behavioural characteristics, and also in 6 diagnostic groups. The ingredients of leadership are described and multi-disciplinary sharing in this programme is noted.

Part II comprises working descriptions, instructions, etc., for a wide variety of activities, with the appropriate age and diagnostic groups indicated for each. Included are: some 38 activities related to crafts, audio-visual, drama, dancing, musical activities, special interests, social recreation, sports and games.

The fact that the approach and the material are not new to those familiar with occupational therapy literature makes it no less valuable, as it is well organized, practical material which is clearly described and cross indexed.

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REMBRANDT'S ANATOMY OF DR. NICOLAAS TULP. By William S. Heckscher. (New York: New York University Press, 1958, pp. 217, 85 illus. \$15.00.)

Rembrandt's famous painting, often called "The Anatomy Lesson" is known to all the civilized world. It was executed when Rembrandt was only 26 years of age and had just settled in Amsterdam. The painting is now one of the chief ornaments of the Mauritshuis at the Hague. In the present volume, Professor Heckscher, who is Director of the Iconological Institute of the University of Utrecht, inquires into the origins of this painting done by Rembrandt in 1632. He is interested in the

cultural context which the painting reflects, and his task is one of historical reconstruction. Rembrandt, the great master of light and shadow, is fortunate in his interpreter, for with Professor Heckscher's analysis we now have for the first time, what is probably a sound account of the meaning of this not very enigmatic work. Enigmatic or not, Rembrandt's painting has long been misinterpreted as Professor Tulp giving a lesson to his ardent colleagues in anatomy. It has long been known that the men in the painting were not Tulp's anatomical colleagues, but it was thought that what was being portrayed was a lesson in anatomy. Apparently this is a misinterpretation, for as the author shows, what is most probable is that an annual public dissection is being portrayed, to which the public was admitted, as to a theatre, upon payment of a small fee. The author also renders it highly probable that the painting was initiated at the suggestion of Dr. Tulp, and that each of the other figures in the painting paid their fee in order to have themselves portrayed. It was a nice idea. It is also clear that Rembrandt did not observe the actual anatomy, and that he was supplied with an illustration of the extensor tendons of the forearm and hand, which he erroneously superimposed upon the flexor surface of the forearm. This is quite clear to anyone with an elementary knowledge of human anatomy, and is further supported by the fact that the dissected forearm is somewhat out of proportion, being rather larger than it should be. But I am not sure of this latter criticism. A dissected limb is often much more massive in appearance than the undissected limb. So that here Rembrandt may have been sounder than his critics.

This is in every way a delightful book, with numerous illustrations, and nice fat footnotes at the back of the book, and beautifully produced in folio.

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MENTAL HEALTH MANPOWER TRENDS. By George W. Albee. (New York: Basic Books Inc., 1959, pp. 361. \$6.75.)

This book is the third in a series of monographs to be published by the Joint Commission Mental Illness and Health as a part of a National Mental Health Survey. It is a well documented study of major importance, dealing with a critical situation. The report will be of particular interest to all concerned with the planning and development of Mental Health programmes and treatment services.

The study is broadly based and clearly presented; much of the material was reported by the author in a previous study of manpower trends in psychiatry, psychology and social work. In this report Dr. Albee has enlarged upon the basic concepts presented in his previous work, and has emphasized the magnitude of the problem and the crippling effect of public indifference.

The material is introduced by Dr. J. R. Ewalt, the Director of the Joint Commission on Mental Illness and Health, who outlines the scope and content of the study. In the report, Dr. Albee presents the problem in general terms, and deals specifically with the current situation and future prospects for each of the professions directly related to mental health services. Each of these sections will be of special interest to the respective discipline. Separate chapters are also devoted to other professions and occupations related to mental health and mental illness. The work is concluded with chapters on "The Crisis in Education" and "Implications for the Future." Throughout the work the author has clearly indicated the basis for his opinions and conclusions, and the text is well supported by statistical data and an extensive bibliography.

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ASEXUALIZATION: A Follow-up Study of 244 Cases. By Johan Bremer, M.D. (New York: Macmillan Company, 1959, pp. 357. \$5.00.)

This book is a follow-up study of 215 men and 28 women who were castrated because they were sex offenders. The report was made by Dr. Johan Bremer, medical superintendent of Gaustad Mental Hospital in Norway. Of the 215 men, 109 were classified as idiots, imbeciles, or morons, 53 as schizophrenics, 24 as psychopaths, 16 as sexual deviates, 10 as epileptics and 3 unspecified.

Following castration they were observed for periods varying from 10 months to more than 10 years. Four of them died from the operation. The data were obtained from hospital records, interviews with the castrates, their friends, and members of their families. Sixty-eight were castrated at their own request. Eighty castrations were compulsory, during the Nazi occupation. Thirty-seven were not brought before a court prior to castration. Of these, 13 were guilty of sex offenses against women, 10 were guilty of exhibitionism, 8 of sex offenses against young girls and only one

of sex offense against young boys. One hundred and forty-seven of the men were selected by psychiatrists as suitable for castration therapy. They were "so deteriorated or mentally underdeveloped that they had no conception of what castration involved." Of those who chose to be castrated "the dominating motive of the large majority was quite definitely to regain freedom." Individual cases are cited and the data regarding them is condensed in tabulated form.

It is evident that in many cases castration is regarded as a form of punishment and a considerable proportion of those who consented, afterwards regretted having agreed to the operation. The author is conservative in his conclusions regarding the value of castration. He says: "Castration is only of therapeutic significance in behavioural disturbances involving an urge for sexual relief. No general effect of pacification has been encountered . . . , no sedative influence on exaggerated affections, no harmonization of emotional life, no 'resocializing' influence on asocial or anti-social behaviour beyond the sexual sphere . . . castration has yielded poor results in schizophrenic and epileptic psychoses, and many complications of emotional origin have ensued in the psychopaths . . . the most satisfactory results were obtained in the case of the habitual sexual deviates, including the homosexuals and the oligophrenics." Aside from the misstatement in this last sentence there is little in the report of cases to support the impression that castration was therapeutic with habitual sexual deviates.

Twenty-seven of the 28 women were castrated by operation and one by x-ray. Two-thirds of them were under 25 when they were castrated and 11 were less than 20 years old. Thirteen were castrated for promiscuity and 14 for behavioural disorders. Nine of the 13 who were promiscuous have continued to be so. Ten were classified as psychopaths, 11 as idiots and imbeciles, 3 as schizophrenic and 3 as epileptic. The general conclusion by the author is: "The results of the legal castration of women seems so uncertain and poor that there is definitely doubt as to its justification."

Those who are interested in the indications for therapeutic castration of sex offenders with and without other manifestations of maladjustment may find considerable information in this book. The general impression given is that castration has no value as a form of punishment, and little if any value as a form of therapy.

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PREGNANCY, BIRTH AND ABORTION. By *Paul H. Gebhard, Wardell B. Pomeroy, Clyde E. Martin, and Cornelia V. Christenson.* (New York: Harper-Hoeber, 1958, pp. 282. \$6.00.)

Many of data utilized in this study were personally accumulated by the late Alfred C. Kinsey. Subsequent to his death in 1956 his colleagues have continued to compile and analyze data and this volume represents one of the results of their combined labors.

The authors state: "The data presented in the main body of this study represent a portion of the information secured from 5,293 white non-prison females who contributed their case histories to our study of human sexual behavior. In addition, . . . are data derived from 572 Negro non-prison females, plus 309 Negro women interviewed in prison, and 900 white women interviewed in prison. These data on women with prison experience seem to have no precedent in the literature."

All information was secured by detailed personal interviews, recorded in code, with assurances of complete anonymity. Of the white non-prison women 97% of the interviews occurred between the years 1940 to 1949. These subjects came almost exclusively from urban backgrounds and predominantly from the northeastern states. For the most part they represented women who had some interest in, and comprehended the value of, sex research, such as teachers, students, P.T.A. members, women's clubs, civic organizations, social workers and the staffs of hospitals and clinics. Protestants comprised 62% of the sample, Catholics 11%, and Jews 28%. Socio-economically this sample represents the upper 20% of the U. S. population.

The book begins with a study of the single woman and her pregnancy. This is broken down in its relation to age, marital status at interview, age at marriage, educational level, decade of birth, and degree of religious devoutness. Then the outcome of her pregnancy (live birth, spontaneous abortion or induced abortion) is studied in relation to the same factors. The pregnancy and outcome of pregnancy of the married woman are then analyzed in a similar manner. The remainder of the volume follows much the same pattern in studying the pregnancy and outcome of pregnancy of the previously married woman, the Negro woman, single and married, and the prison woman, white and Negro, single and married. The non-prison Negro woman and the prison woman are each accorded separate statistical treatment. The volume concludes with

a penetrating discussion of the many aspects of induced abortion and an appendix in which abortion problems in other countries (the Soviet Union, the Scandinavian countries, Japan, Latin America, etc.) are described in valuable detail.

The authors discuss their findings with an objectivity and a scientific restraint which is solidly rooted in the statistical evidence presented by the data at hand. They make no sweeping claims that their findings hold true for the population as a whole, but are frank to state that their conclusions apply primarily to the rather special group making up their sample.

Out of a wealth of data, the following material is of particular interest to psychiatrists:

1. Of the 754 previously married women (separated, divorced or widowed) of all educational levels, 3 out of 4 were found to continue having intercourse subsequent to the termination of the marriage. There were 157 post-marital conceptions, 79% of which ended in induced abortion. Comparing this with the single women who became pregnant premaritally, 75.8% of such pregnancies were terminated by an induced abortion.

2. The predicament of pregnancy in the previously married woman results in marriage in only 7% of cases, as compared to twice that figure among pre-marital pregnancies.

3. "The effect that the degree of religious devoutness has on sexual behavior (and its reproductive consequences) is strongest where religiously taboo behavior is involved."

4. For the lower educational level pre-marital pregnancies are frequent and induced abortions comparatively rare, whereas with the upper educational levels such pregnancies are less frequent but these pregnancies are more frequently terminated by induced abortion.

5. Out of a total of 1,067 induced abortions among the white non-prison women only 6.4% were legal abortions and these included operations for ectopic pregnancies.

6. The great majority of all induced abortions stem from pregnancies in marriage. The young married woman and the woman nearing the end of her reproductive life resort to induced abortion more commonly than does the middle group. Induced abortion is also commoner among married women who later become separated, divorced, or widowed.

7. Of the known agents responsible for the induction of illegal abortions among the white non-prison women, operation by physicians accounted for 91.2%.

8. Statistically this material gives no evidence of sterility or damage to orgasm capacity resulting from induced abortion. Unfavorable psychological sequelae were reported by 13.6% of the pre-marital group, 4.1% of the marital group and 5.4% of the previously married women.

Even if the findings in regard to induced abortion were characteristic only of the type of women included in this sample, they would be of great importance to psychiatrists. We know, however, from many other sources that the abortion problem is widespread throughout the country and that it involves all strata of society. This volume should lend support and courage to those who are endeavoring to bring more realism to bear upon the question of broadening the legal grounds for therapeutic abortion. To combat the high incidence of illegal abortion, the addition in legal codes of socio-economic factors to the already defined medical and psychiatric grounds for therapeutic abortion would bring the abortion problem under the control of the ethical medical profession—where it belongs.

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JOHN DEWEY: *DICTIONARY OF EDUCATION*.
Edited by Ralph B. Winn. (New York: Philosophical Library, 1959, pp. ix + 150. \$3.75.)

John Dewey (1859-1952), commonly spoken of as America's foremost philosopher of our time, has been a controversial figure as all great thinkers must be. As he speaks or writes he is experimenting with the thought process, scrutinizing it in passage, and it may at times cost the listener or hasty reader an effort to follow. But the conclusion may be a brilliant summing up in a short pithy statement that sticks in the memory, an apothegm to be quoted.

There can hardly be a better introduction to the almost universal wisdom of Dewey than a book such as this, wherein the editor has collected from the writings of the philosopher and arranged in alphabetical order the subjects about which he has given formal expression of his views. These quotations vary in length from a line or two—"Prejudice is strengthened in influence, but hardly in value, by the number who share it"—to the 6 pages under the heading "School," representing passages from 7 sources.

In the logic of John Dewey every area of human experience and cognizance must be subject to the same kind of examination and

test that characterizes all scientific investigation. For fulness of knowledge there can be no reserved domain where the scientific method does not apply. Worthy knowledge is the product of intelligent experience and thinking and must lead to intelligent behavior and action. And if this is true of the individual it is even more significantly true of society. The philosophy of Dewey is therefore a social philosophy. And social philosophy and moral philosophy can not be strangers.

Santayana has said: "Morality is something natural. It arises and varies, not only psychologically but prescriptively and justly, with the nature of the creature whose morality it is." And again, "only a morality frankly relative to man's nature is worthy of man." And Dewey, whose thinking is not dissimilar, continues: "Morals is the most humane of all subjects. It is that which is closest to human nature; it is ineradicably empirical, not theological nor metaphysical, nor mathematical. . . . Moral science is not something with a separate province."

Dewey has been severely criticised as being responsible in considerable measure for the faults of his "progressive" education. Supporters on the other hand assert that juvenile indiscipline and other consequences of too much freedom in the early school years are attributable more to overzealous practitioners of progressive education than to the Master himself.

Perusal of the excerpts quoted under the headings School and Education give clearly Dewey's picture of school performance as it has been and as it should be. As they stand it is difficult to see how exception could be taken to these statements. Education is simply a function of the democratic process, indeed fundamental to it. "A democracy is more than a form of government, it is primarily a mode of associated living." And the keynote of this way of life as Dewey sees it is "the necessity for the participation of every mature human being in formation of the values that regulate the living of men together; which is necessary [for] both the general social welfare and the full development of human beings as individuals."

The key word in that sentence is presumably the word "mature." Maturity becomes a condition of satisfactory associated living. But maturity is not necessarily a consequence of the accumulation of years. And so we may have maturity in childhood or lack of it through all the decades. It is a quality that may not develop naturally and if acquired at all, may have to be learned the hard way, and

the school is the place to provide any possible guidance in that direction.

"Belief in equality is an element of the democratic credo. It is not, however, belief in equality of natural endowments. . . . In short, each one is equally an individual and entitled to equal opportunity of development of his own capacities, be they large or small in range."

But we find nothing in the text to suggest that freedom in the school room means freedom from guidance and such direction and control as needed for order and productive results.

However, at the 1959 annual meeting of the American Historical Association, as reported in the *New York Times*, Professor Lawrence Cremin of Columbia University Teachers College felt that there had been so much misunderstanding of the Dewey educational system that it was opportune to set the record straight. He stated that as early as the 1920's Dr. Dewey became increasingly critical of progressive education. "By 1938, the very year the Progressive Education Association reached its membership peak, Dr. Dewey could already perceive the ideological fragmentation destined to paralyze the movement. When the Association finally died in 1955, there were few mourners at the funeral."

In defence of Dewey as an educator Dr. Cremin spoke of "the distortions, the popular misconceptions and the gross caricatures that have long marked appraisals of Dewey," and he held that ignorance of the history of education was responsible for converting him into a "fictional figure in the policies of American education."

To properly review this book would be to quote more extensively than space allows. Keynotes of Dewey's philosophy are often expressed in a few incisive words which each must ponder for himself.

Here are two from My Pedagogic Creed (1897) "Education . . . is a process of living and not a preparation for future living." "Education is the fundamental method of social progress and reform."

Other apothegms: "The measure of civilization is the degree in which the method of cooperative intelligence replaces the method of brute conflict."

"Society is individuals-in-their-relations. An individual apart from social relations is a myth-or monstrosity."

"Natural rights and natural liberties exist only in the kingdom of mythological social zoology."

"Consciousness is only a very small and

shifting portion of experience."

"Skepticism that is not . . . a search is as much a personal indulgence as a dogmatism."

"There is no belief so settled as not to be exposed to further enquiry."

"Men may be brought by long habit to hug their chains."

"Man, a child in understanding of himself, has placed in his hands physical tools of incalculable power. He plays with them like a child."

"Manners are minor morals."

"The true means the verified and means nothing else."

"Values are as unstable as the forms of clouds."

C. B. F.

CURE DE SOMMEIL COLLECTIVE (Collective Sleep Treatment). By *Henri Faure*. (Paris : Maison & Cie, 1958, pp. 267. 2.500 fr.)

This book is the account of the personal experience of the author with prolonged sleep treatment in 142 patients (84 neurotics, 18 schizophrenics, 22 melancholics and 18 acute psychotic episodes), who concomitantly received group therapy. It is unique in the thoroughness with which the author presents individual observations, in the originality of of the organization and particularly in the consideration of psychotherapeutic processes during the sleep period. It is the first time that in a book on this subject the sequence of dreams and their psychological vicissitudes have been reported.

The author's set-up for sleep treatment consists of a totally separate ward from the rest of the hospital, where a group of patients spent an average of 20 days. The atmosphere of the section is geared toward providing a kind of "artificial paradise," where, in action or in phantasy, the patients experience a relatively complete gratification of their different needs. The sleep is induced with a combination of barbiturates and chlorpromazine. It is a relatively light sleep which allows the patients to communicate with each other and with the therapist who initiates a group therapy during the waking period.

The author describes behaviorally 4 stages during the sleep treatment, *i.e.* stage of adaptation, of regression, of tension and of reharmonization. He discusses the role of each stage in the process of sleep-cure, and in great detail gives the account of dream life of the individual during each period. Even though the emphasis is solely on the manifest content of dreams, the wealth of material and se-

quential descriptions are unique and most instructive. Each patient receives, concomitant with sleep-cure, individual and group psychotherapy. However, these psychotherapies are mainly supportive, aiming at the establishment of a positive transference and allowing the 4 stages of treatment to unfold themselves. The author maintains an "endogenous efficacy" for the sleep treatment, which transcends the psychotherapeutic function of the therapist and for this reason very little use, if any, of interpretation for the sake of uncovering, is made. This seems to be due to the general orientation of the author, which is eclectic. At times he seems to be oscillating between analytic, phenomenological, existential and physiological premises, and he employs a mixture of terms borrowed from these different disciplines. The author's main thesis is that the sleep-cure, based upon the premise of "abreaction," which is assumed to occur during oniric experiences.

It is regrettable that the section on therapeutic results is, in contrast to the other sections, relatively small, on the criteria of recovery and on the term "cure" which is constantly mentioned. In general the sleep-cure had no effect on chronic schizophrenics. The cases which showed complete recovery were among acute psychotic episodes (13 out of 18) and melancholias (11 out of 22). Out of 84 neurotic patients, 47 showed "frank stabilization." Taken in general these results appear equivocal; however, sleep-cure as envisaged by the author is not only a method of treatment but an investigational procedure as he so aptly demonstrates in his detailed case studies. As a whole the book is a must for all those who are interested in this area.

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PSYCHOPHARMACOLOGY FRONTIERS. Edited by *Nathan S. Kline*. (Boston : Little, Brown Inc., 1959, pp. 533. \$10.00.)

It has become the vogue to publish uncritically as a book all the papers presented at a symposium. Sixty-five such papers presented at the Psychopharmacology Symposium of the International Congress at Zurich in 1957 are reprinted here. These deal primarily with Rauwolfia and phenothiazine derivatives but theories and experiments concerning monoamine oxidase inhibitors and other psychotropic compounds are well represented. In addition, the recorded discussion is appended and clarifies and expands immeasurably upon

these papers. Much of great value will be found here and it is this that makes this book more than the usual mere collection of papers. The section concerning clinical studies contains much repetition but in the sections on Specific Problems and Mode of Action one is amply repaid for time spent in close study of the thoughts expressed by some of the leading investigators in the world. Biochemical theories from Sweden, Germany, and Switzerland, carbohydrate and electrolyte studies from France, and electroencephalographic reports from Italy bring to us papers that we do not normally have readily available and translated for us. Prof. Delay's classification of these drugs help bring order out of an evergrowing plethora of compounds while Winkelman's and Ostrow's papers give one some understanding of and reason for using each type. Some papers deal with philosophic speculations while others include explicit statements as to the use of drugs in psychoanalysis, significance and treatment of side effects, and specific indications for each type of drug. Thus a study of the material in this book will provide one with some understanding of current theories of the mode of action of psychotropic drugs and repay the student through added confidence in their administration.

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THE PROBLEM OF DELINQUENCY. By Sheldon Glueck. (Boston: Houghton-Mifflin Co., 1959, pp. 231. \$10.50.)

This book discusses the problem of juvenile delinquency in terms of "a set of materials which will reflect the intricacies of the problem and assist in training prospective prosecutors, judges, probation and parole officers, clinicians, social workers, and others in an appreciation of its ramifications and implications." There is little question that the author, who is the Roscoe Pound Professor of Law at Harvard University, has accomplished his expressed aim.

The book has been divided into 4 major parts. 1. Incidence and Causation; 2. The Juvenile Court and the Law; 3. Treatment; 4. Prevention of Delinquency. Each part is divided into various sub-sections and chapters covering a wealth of material, a great deal of which has appeared previously in law, psychiatric, sociological, psychological and other journals and books on the subject. In short, this book attempts to be a veritable encyclopaedia on the subject of delinquency.

Unfortunately, in spite of the thoroughness

of the coverage, much of the material contained in the sections on theory does not hold up, and the reader finds himself wishing that more attention had been paid to previous psychological and psychiatric research on the questions of delinquency, and that more consideration had been given to their findings. This objection is particularly disturbing because the author, as a law professor, is aware of the usual use of evidence, and yet many statements appear, particularly in the section on Incidence and Causation, which are generally unsubstantiated. This is not so much a criticism of the text as rather a re-emphasis of the need expressed by Professor Glueck himself for a more consistent binding of the theories on delinquency to scientific theories in other areas of science. This is specifically true in the areas of the biological and behavioral sciences.

The second section of the book on the Juvenile Court and the Law is excellently brought together. It contains, besides general histories of the juvenile court, the citations of various cases pointing up specific legal issues which have served to establish the legal precedents in the field, as well as a very thorough discussion of constitutional protections and various related problems. This section of the book can only be described as an outstanding contribution to our knowledge of juvenile delinquency and to forensic psychiatry and, as such, is certainly a major contribution.

The latter sections of the book are on Treatment and Prevention. The area of Treatment makes a definite attempt to report experiences in various situations, such as institutions, and there is an effort to gather evidence in various treatment methods. The emphasis is again, purposely, on the legal type of institutional treatment, *etc.* There is a section on psychotherapy, psychotherapeutic procedures and methods, which again we feel might have been more strongly emphasized, but generally speaking this area is quite adequate. The section on Prevention, of course, leaves much to be asked for, but they are the same things that are asked for generally by all workers in the field. Obviously, we cannot expect Professor Glueck to have the answers on how to prevent juvenile delinquency, but the suggestions he makes through the articles which he has included in his book are valuable and useful.

Generally speaking, we would say that this book has been a studious and worthwhile attempt at pulling together much of the available material. His contributors are drawn from all disciplines, including the legal profession,

psychiatrist, psychologists, sociologists, anthropologists. Professor Glueck's effort in bringing them together has been a valuable one. We would certainly say that this is a useful and necessary book for individuals faced with the problem of dealing with the juvenile delinquent.

Unfortunately, as is true of most encyclopaedic tomes, this book probably will not be read from cover to cover, but it will certainly remain one of the most important reference works in the field and will retain a long-term usefulness as such.

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A PSYCHIATRIST WORKS WITH BLINDNESS. By Louis S. Cholden, M.D. (New York: American Foundation for the Blind, 1958, pp. 119. \$1.85.)

Two valuable and related achievements are to be credited to the American Foundation for the Blind as a result of their preparation of this handsome little volume of papers. They have published an appropriate memorial to the prematurely ended life and work of a brilliant and dedicated young psychiatrist whose service to the blind and to their organization was universally praised and appreciated. At the same time, they have also presented a collection of papers, the content of which provides a significant contribution to the understanding of the problems of rehabilitation not only of the blind but in other handicapped as well. This second accomplishment no doubt serves as an even more fitting memorial to the thoughts and efforts of a doctor and teacher who took up the challenge of work in this difficult field with enthusiasm, scientific discipline, originality of approach, and earnestness of purpose of a high order.

The role of a psychiatrist in the interdisciplinary efforts of an agency working with the handicapped has a number of facets of near equal importance and the papers in this volume indicate the awareness that Cholden had of these multiple responsibilities. Group therapy, for example, and the conduct and supervision of other forms of psychotherapy are only part of a program properly designed to meet the great range of problems involved in the rehabilitation of the handicapped. Liaison and cooperation with physicians and ophthalmologists are the concern of a paper on the psychiatric aspects of informing a patient of

blindness. An understanding of the patient's identity as a human being with particular personality patterns and a particular life situation at the moment is considered essential, in this and in every contact between doctor and patient. Certainly the traumatizing and regressing impact of serious illness, especially mutilation or loss of function will demand the keenest awareness of the dynamics of the total emotional situation as well as the awareness that the rehabilitation process in a catastrophic illness involves every aspect of the daily life of the individual. Counseling, medical services, education, questions of financial aid, vocational training, in a great range of taxing and complicated situations: the insights derived from this holistic approach are used to describe and illuminate the problems and techniques important in each phase of the rehabilitation effort.

Two papers merit particular note as excellent examples of the application of clinical and theoretical acumen to the special tasks confronting the worker with the blind. "Some Psychiatric Problems in the Rehabilitation of the Blind," contains a wealth of challenging information derived from a great deal of specialized clinical experience; "The Effects of Monetary Giving on Human Beings," reveals the extent of Cholden's helpful understanding of the difficulties involved in professional work with the blind on many levels. While it would be inappropriate to outline even the main ideas here, two quotes may serve as tempting bait to indicate the flavor and value of the content of all of this interesting book. "The principles of weaning, encouragement of independence, and maturation, characteristic of childhood development, are valid in the readjustment of the blind person. During this stage of maturation, working with well trained blind teachers is extremely valuable for identification and emulation remain excellent means of learning." "It seems peculiar, too, that some of the people having the same deep feeling for a client, will respond in exactly the opposite way (to those who over-identify). It is as though they cannot stand the pain of this identification and then they take the road which might say 'we have nothing in common, I have no sympathy or identification with you.'" This is similar to the blind person who will have absolutely nothing to do with any other blind person. It might be considered a rejection of identification.

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THE SOCIAL PSYCHOLOGY OF GROUPS. By John W. Thibaut and Harold H. Kelley. (New York: John Wiley and Sons, Inc., 1959, pp. 313. \$7.00.)

Thibaut and Kelley present a theoretical viewpoint about small group phenomena in which they systematically evolve a "point of view" that presents fresh and insightful ways of interrelating diverse statements about social behavior. Yet their work, as the authors realize, fails to meet many formal requirements of scientific theories. In both respects it reflects the current status of social psychology.

The query pursued throughout is, "How does social interaction influence behavior?" Here, they assign priority to essaying a clarification of dyadic interaction and its consequences for participants. Then they extend their analysis to more complex social relationships.

Their basic assumption is that most socially significant behavior is repeated only when somehow reinforced. Thus, in analyzing interaction, they center on the participants' possibilities for reciprocal control mediated by their ability to affect one another's "outcomes" (through rewards and reinforcements). Consequently, they construct "objective" reward-cost matrices in which *all* relevant variations in outcomes (rewards and costs) produced in the interaction are represented. Since individuals evaluate outcomes, 2 additional concepts are introduced to provide evaluative standards. The attractiveness of the dyad is determined by the person's comparison of experienced or anticipated outcomes with his "comparison level" which is influenced by *all* of the outcomes known to him. His dependency on the dyad is determined by his "comparison level for alternatives" which is the lowest level of outcomes a member will accept in the light of alternative possibilities.

The authors apply these concepts to understanding the dyad. Here they analyze the evolution of stable dyads, the extra and intra-interactional determinants of dyadic behavior and the determinants of members' attraction to and dependency on the dyad. They also present a careful analysis of norms and roles and the effects of varying task requirements and forced compliance.

Finally, they extend their concepts to encompass larger small groups. Now they discuss the effects of increased size on such social interdependencies as status, norms, power and control, roles and leadership.

This, then, is an analysis of a variety of social phenomena in the same limited set of

concepts and the use of these terms to organize apparently diverse research data. As such it is of real import. Thibaut and Kelley pursue their analysis forcefully and know their research literature. The content forms a refreshing antidote to writing that oversimplifies conformity, followership, leadership and the like.

As a scientific theory it suffers from the defects of its forefather, Lewin's "R-R immediate psychological field" theory. The explanatory statements are postdictive; unequivocal or negative evidence for the theory is virtually unobtainable. And properly so! The theoretical consequences of constructs demand that they be predictively related to empirical operations. This cannot be achieved if the authors insist upon the current definitions of their central concepts (all, known, *etc.*). Finally, while little is known about the systematic operation of social reinforcers, a much more explicitly sophisticated marriage between reinforcement learning and social psychology is required if the authors' approach is to become productive.

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CONVULSIVE DISORDERS IN CHILDREN. By D. H. Chao, R. Druckman, and P. Kellaway. (Philadelphia: W. B. Saunders, 1958, pp. 151. \$6.00.)

This is a short treatise which Dr. Kellaway in the preface states "... is a revised version of a manual on convulsive disorders which the authors originally prepared for the use of residents in the Blue Bird Circle Children's Clinic. It is an attempt to provide a concise and simple review of diagnosis, treatment, and management of the convulsive disorders. . . ."

There is a "cataloguing" type of approach without much attempt being made to discuss the basic mechanisms involved or to give the reader a clear concept of the processes as a whole. It is much as if this were a manual for residents in medicine which listed the various etiologies and the signs and symptoms seen in congestive heart failure without any discussion of the physiology or how all of these fit into some reasonable or understandable pattern. Except for a very brief mention of some of the neuroanatomical basis of the various types of seizures, no discussion of or even references to the recent, important advances in neurophysiology or neurochemistry are given. All this may suffice for the busy general practitioner but represents unfortunate omissions for the specialist and particularly for the resident

in training. Too, probably insufficient attention is given to the psychological, psychiatric, and sociological aspects of epilepsy which are among the most important and most difficult problems in the care of the epileptic at the present time.

To commend the book are the chapters on "Massive Spasms," "Benign Febrile Convulsions," and "Breath-holding Attacks." These are topics not often discussed in other sources and are presented here concisely and well. The chapter on the "Management of Seizures" is also good. The "Role of Electroencephalography in the Diagnosis and Management of the Epilepsies" is rather thorough and would be, for the practitioner, a good introduction and appraisal of this laboratory method.

This book is not a definitive work on epilepsy nor apparently was that the intention of the authors. It can be recommended for the practitioner but, unfortunately, it lacks the depth and completeness required by the specialist or the resident in training for a neurological specialty.

W. J. FRIEDLANDER, M.D.,
Boston, Mass.

THE SURGEON AND THE CHILD. By Willis Potts.
(Philadelphia: W. B. Saunders Company,
1959, pp. 225. \$7.50.)

This is a wonderful contribution to the surgery of childhood. The title is most apt because it concerns Dr. Potts' own experience with paediatric surgery in the Children's Memorial Hospital in Chicago.

The contents are very readable and full of many apt expressions of the author's own. For instance, the chapter on portal hypertension is introduced by the statement "Portal hypertension in children is a tough problem." Comments such as this running through the entire book make it very readable and add to the interest. It reminds one of the classical treatise of Codman's on the shoulder in which the personality of the author shines through the whole book. It seems to me in this present world of super scientists we need more books with the individual touch to them such as this of Dr. Potts.

The whole approach to surgery in the child can be summed up in a few words from the beautiful chapter on the Heart of the Child, "Tell them in simple words why they have to go to the doctor, or the hospital, or why they have to have an operation and in most instances they will co-operate in a fashion that adults might well emulate. Faith and trust are completely unspoiled when children are

dealt with honestly. So little effort and so great the reward."

WILLIAM T. MUSTARD, M.D.,
Toronto, Ont.

BEHAVIORAL ANALYSIS: AN ANALYSIS OF CLINICAL OBSERVATIONS OF BEHAVIOR AS APPLIED TO MOTHER-NEWBORN RELATIONSHIPS. By David M. Levy, M.D. (Springfield, Ill.: Charles C Thomas, 1958, pp. 416. \$9.50.)

Is it possible to make a sufficient number of pertinent observations about a bit of raw behavioral data, abstracted from the total situation in which it has occurred, and arrive at reliable and significant inferences concerning the original situation yielding the data? The author attempts to do this, working with responses occurring in the early nursing situation. An observer stands at the foot of the bed and records, at a purely descriptive level, the succession of responses of both mother and infant, from the time the nurse brings the child into the room to the time she returns to take the child from the mother at the end of the feeding. Between 1943 and 1944, 15 mothers were observed on 2 or 3 such occasions in the neonatal week. Four other mothers who did not nurse their infants were included in the study.

The book is devoted to an analysis of the responses observed. The total situation was broken down into 3 major subdivisions: the greeting phase, the feeding phase, and the end phase. There were, in addition, a number of interval phases occurring at either the end phase or sometimes earlier, when nursing behavior ceased for a prolonged period of time. The running observational record was, in turn, broken down into more easily handled observational units, each unit containing a separate maternal response.

The author's concern was with the question of whether or not a statement could be made concerning an attitude, specifically maternal attitude, with regard to both its presence or absence and its quantitative variation among the group of mothers, from an analysis of observational data alone. The author believes that ultimately this could be done, but he found it useful, at least in the initial stages of the investigation, to make use of a temporary expedient in order to obtain a preliminary ranking of the mothers in regard to maternal attitude. A questionnaire, previously tested to reveal maternal feeling, was given to the mothers, and provided a clinical measure of the most and least maternal mothers in the

group. It soon became apparent that the problem of establishing adequate criteria for a comparison of behavioral responses led in two directions; first, the examination of the situation in which the response was occurring and second, the behavior of the infants in relation to the maternal response under scrutiny. The responses obtained in each phase were analyzed as independent variables, according to number and variety; as variables dependent upon the situation, the situation defined as a specific set of conditions under which patterns can be compared; and finally, as variables dependent upon the person; as, for example, the responses of the same mother on different neonatal days.

When this isolated segment of relational behavior is so scrutinized, a myriad number of exploratory possibilities appear to be imbedded in the data themselves. When this is pursued with ingenuity, as well as with rigorous honesty and a scrupulous avoidance of any loose, general, or unwarranted assumptions, the result is a series of exciting developmental sequences, during which time a gradual shift occurs from a reliance on clinical measures and opinion, to a ranking of the mothers in regard to maternal attitude, based solely on the data themselves. Were the author only concerned with the specific questions raised about maternal attitude, one might well wonder whether the conclusions reached concerning the ranking of the mothers warranted the elaborate, patient, tenacious working-over of the data. Viewed as the prototype of a method possibly applicable to many other problems in behavioral science, and as a technique for the examination of behavioral responses at an objective level and removed from the inferential and motivational biases of the observer, the contribution is both original and stimulating.

The task of the reader is a somewhat exacting one, despite the absence of jargon of either a psychiatric or a statistical variety. The analysis is, at times, so intricately detailed that the reader must be prepared to maintain a running familiarity with the raw data as well as keep pace of the analysis as it proceeds. These tasks would be somewhat easier were it not for an uncommonly large number of typographical errors and editorial oversights. These included spelling errors (pp. 147, 190, 223, 237, 243, 254, 287, 273, and 276), instances in which footnotes were incomplete or absent (pp. 141, 191, and 195), instances in which references to tables appeared mistaken or con-

fusing (pp. 143, 153, and 182), and an instance in which a part of a sentence was reduplicated (p. 249).

The reading of this book is an experience in the application of logical inference to carefully-distilled observational data. The book will probably be of greatest interest to research workers in the behavioral sciences. At a more general level, it spells out an important lesson for all psychiatrists by establishing a basis for a deeper appreciation of observational data in a field where interpretive and motivational analyses have so long held the spotlight.

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PSYCHOLOGY: A STUDY OF A SCIENCE. Study I. Conceptual and Systematic. Vol. I. Sensory, Perceptual and Physiological Formulations. Edited by Sigmund Koch. (New York: McGraw-Hill, 1959, pp. 710. \$9.75.)

This is the first of a series of a projected 7 volumes which will involve 80 contributors. Study II will be entitled, "Empirical Substructure and Relations with Other Sciences," and Study III, "Psychology and the Human Agent." Most of the papers in Study I are highly technical as may be gathered from such chapter headings as: "Three Auditory Theories," "Color Theory," "Quantum Theory of Light and the Psychophysiology of Vision," "Theory of Stereoscopic Vision," etc. Probably of greatest interest to psychiatrists are the chapters by Hebb, "A Neurophysiological Theory," and by Morgan, "Physiological Theory of Drive." In the latter, in particular, the author has brought together experimental evidence to support a "central motivated state" in contrast to peripheral theories. The central theory, in brief, proposes that drives may be aroused and abated by states in the central nervous system rather than solely by stimulation of receptor organs. Of special interest to the author are the states that lead to behavior involving hunger, thirst, and sex. Alteration in these states is produced by changes in electrolyte balance, hormones and activity in the reticular system.

The intent of the whole series is to survey the status of psychology as a science. Probably later volumes will reveal material of more direct relevance to psychiatry.

P. E. HUSTON, M.D.,
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FLANDERS DUNBAR

IN MEMORIAM

FLANDERS DUNBAR

1902-1959

Flanders Dunbar was not a conventional physician who followed the traditional career of her profession. Her interests were broad and comprehensive, extending from literature, religion, psychiatry, psychoanalysis and psychology, to internal medicine.

Born in 1902, the daughter of a physicist and mathematician, her career was a true reflection of the universality of her interests. After obtaining a B.D. degree at Union Theological Seminary, she obtained her M.D. at Yale and undertook clinical research at the Worcester State Hospital. She continued her studies at New Haven Hospital and Bellevue, then at the Psychiatric-Neurological Hospital in Vienna and at Burghölzli. She received her Med. Sc.D. degree from Columbia University.

Dunbar was a pioneer in widening the field of the medical sciences through the study of the influence of emotional factors upon diseases. She was a woman of great intuition and imagination, disciplined in the philosophy of science. All this made her predestined to become one of the most outstanding physicians among those who introduced a new emphasis into medicine, the psychosomatic approach to the study and treatment of chronically ill patients. Attracted by the ancient body-mind dilemma, she cut across the traditional philosophical meditations and attacked this eternal problem which taunted medical men, philosophers and religious leaders since antiquity until our own times, in the Hippocratic spirit of unprejudiced bedside observation. She made her findings available to others in a steady flow of careful and well-organized publications. Her comprehensive studies of serial admissions of unselected patients at the Presbyterian Hospital in New York are classical contributions to modern medicine. She observed and described the totality of the patients, their physical, psychological and environmental conditions, and described personali-

ty profiles characteristically found in different diseases. Under the influence of other workers' findings, she modified her theoretical concepts and accepted the view that organic syndromes correlate with circumscribed psychodynamic constellations rather than global personality traits. One of the most impressive among these psychosomatic studies is the discovery of the accident-prone personality. This finding came about as truly novel discoveries often do—unexpectedly. She used surgical patients, victims of accidents, as a control group to compare their psychology with patients suffering from chronic ailments. This group which she expected to show no specific emotional features turned out to be a psychologically well-defined group.

Apart from her original contributions to psychosomatic medicine, she compiled a monumental reference book, *Emotions and Bodily Changes*, which in serial editions kept pace with this rapidly growing field. This volume gave research workers invaluable help and has remained a standard publication of historical significance.

Her general influence upon the development of medical thought and research was outstanding. With the collaboration of a small group of physicians and with the help of Frank Fremont-Smith of the Josiah Macy, Jr. Foundation, who shared her conviction about the significant role of emotional factors in organic diseases, she founded at first the *Journal of Psychosomatic Medicine* and later the American Psychosomatic Society. It can justly be said that no single person was more effective than she in the organization of the psychosomatic approach in modern medicine.

Those of us who from the beginning collaborated with her in this venture had opportunity to become acquainted with her, not only as a medical pioneer but as a person as well. Her all-absorbing devotion to her work served as an inspiration for all of

us. No one could, however, keep pace with her prodigious working habits. Even when travelling, she incessantly dictated her ideas to her secretary, read every publication on her field, corrected manuscripts and discussed and formed editorial policies. At the editorial meetings of the new Journal held in regular intervals at her home, she set a model for effectively organizing a medical journal and maintaining its standards. She was a rare combination of a productive and original theoretician, clinical observer, therapist and organizer. As many pioneers, she was subjected to criticism from those who resisted her insistence upon consider-

ing psychological factors as seriously as somatic ones in organic disease—an attitude that was still alien to the prevailing mechanistic physico-chemical orientation. Because her devotion to research was so much greater than her personal ambitions, she would take these objections as well as the criticisms of her psychosomatic colleagues without personal resentment and was always ready to revise her formulations by new evidence. Not only psychiatry, but the whole of medicine lost in her a pathfinder of unusual stature.

Franz Alexander

GEORGE NEELY RAINES

1908-1959

George Raines' death leaves areas of loss which will have differing significance to the many who knew him. Those who knew Dr. Raines largely by his professional attainments will point to the end in mid-career of a nationally known leader who stood for progressive psychiatry. His intimate friends will keenly miss a man of feeling who knew how to live the full life. Still others would point to the wide range of his interests. Perhaps those who knew him as a Chief Examiner at the Boards would agree his loss was most typified in many ways by the silencing of the Mosun's pipe which paced his section, rich with significance for those who could read its meaning.

George Neely Raines, retired Captain U. S. Navy Medical Corps, age 51, died September 16, 1959 at the U. S. Naval Hospital, Bethesda, Maryland, following a relatively brief illness caused by metastases from a bronchogenic carcinoma, first recognized about a year earlier as a solitary nodule on a routine annual chest x-ray. His death occurred, as so often, in an otherwise robust, healthy individual in his most productive years.

Dr. Raines was born in Jackson, Mississippi in 1908, the youngest of 3 children of a local merchant. It is said his father would have preferred him to study dentistry and was surprised at his choice of psychiatry.

George was ever practical as a psychiatrist, and undoubtedly acquired much of his hard headed realism from his family background. A newspaper group picture of his third grade class shows an alert youth somewhat smaller than the average of the class. It is reported that he had a 99.5 average on graduation from high school, the highest in the history of the school. He graduated from Ole Miss. in 1928 with a B.S. degree at the age of 20. He obtained a Bachelor of Medicine degree from Northwestern in 1931 after completing one year of internship at the U. S. Naval Hospital, Mare Island, California.

A love for the Navy developed which contributed to a disciplined thinking and intolerance for any mediocre performance. His Navy career was outstandingly successful. He was commissioned Lieutenant (j.g.) in the Medical Corps of the Navy June 26, 1930 and advanced to the rank of Captain. March 10, 1945. Captain Raines served aboard the *USS Idaho*, *USS Saratoga*, *USS Lexington*, and on destroyers as a general medical officer. He began a brilliant career in psychiatry while in the Navy, first serving as assistant to the Naval Unit at St. Elizabeths Hospital. He served as Assistant Chief of Neuropsychiatry at the Old Naval Hospital, Washington, D. C.; subsequently as Chief of Neuropsychiatry at the U. S. Naval Hospital, Portsmouth, Virginia, from

1943 to 1945 ; and Chief of Neuropsychiatry at the U. S. Naval Hospital, Bethesda, Maryland from 1945 to 1950. From 1950 to 1953 and again from 1955 to 1958 he was Head, Neuropsychiatry Branch, Bureau of Medicine and Surgery, Navy Department. From 1953 to 1955 he served as Executive Officer and Commanding Officer of the U. S. Naval Hospital, Portsmouth, Virginia. He was retired from the Navy May 1, 1959. A Navy release states "Dr. Raines' singular accomplishments in psychiatry contributed tremendously to the growth and development of naval psychiatry."

Many of his closest friendships were those who served with him in the Navy. He inspired utmost loyalty from his staff. The term "feathermerchants" will be understood by his close friends of this period, defining again his absolute loyalty and utter rejection of the false or hypocritical. His Navy friends will remember fondly the story he told of the ceremonial reception when piped aboard his first ship in full dress as a Junior Medical Officer. The decision to apply for temporary disability status, enforced by his illness, was perhaps the hardest decision Dr. Raines had to make. This did not occur until one year after hospitalization and he was to die only four months later.

There is so much to say about the peaks of success Dr. Raines attained in the field of psychiatry that summarizing is difficult. Above all I would emphasize his talent as a teacher. As Director of the Department and Professor of Psychiatry at the Georgetown University Medical School in Washington, D. C., from 1948 to the time of his death, he brought to a climax an association of many years with this school. He brought to Georgetown an able staff, greatly expanding the department, establishing residency training, and developing the teaching of psychiatry to a parity with the other major departments in the school. At the student level the program equaled or surpassed in curriculum hours that of all other medical schools. His inspiring talent led to a prodigious effort on the part of his staff and his pioneering foresight permitted the development of maximal supervised therapy responsibility provided to the student.

He was an examiner on the American Board of Psychiatry and Neurology for a

number of years and was President of the American Board in 1956. He was active with committees of both the American Psychiatric Association and the American Medical Association. He was Chairman of the Committee on Nomenclature and Statistics of the APA, a committee which developed the Standard Psychiatric Nomenclature. In 1954 he was a member of the Council of the APA. He assisted in the early development of the Group for the Advancement of Psychiatry. He served as Special Consultant to the Surgeon General of the U. S. Public Health Service and was a frequent participant in meetings which developed policy of the American Psychiatric Association.

Dr. Raines' professional experience included didactic analysis and training with the Washington-Baltimore Psychoanalytic Institute in 1946. His approach was broad and encompassed a profound understanding of what is best described as dynamic psychiatry, including an extensive foundation in "basic" psychiatry and neurology. He had a truly remarkable capacity to keep abreast of new developments, as was manifest in his teaching and in his private practice. His publications cover a wide range of interests, administrative, clinical, and teaching experience, again with emphasis on basic psychiatry, with earlier studies in neurophysiology.

The list of professional organizations of which Dr. Raines was a member includes Phi Chi medical and Sigma Chi college fraternities, American Medical Association, American Psychiatric Association, American College of Physicians, American Neurology Association, Association for Research in Nervous and Mental Diseases, American Psychopathological Association, District of Columbia Medical Society, Washington Psychiatric Society, Washington Psychoanalytic Society, and Medical Society of St. Elizabeths Hospital. He was in *Who's Who*.

In closing I would like to turn again to Dr. Raines as a humanist, family man and friend. Above all George Raines will be remembered as a warm friend and bosom companion. The warmth and humor he experienced in life were richly conveyed to others. His own zest for living was felt

by those close to him. This trait enlivened personal contacts, committee groups, even large meetings. There was also a seriousness of purpose and capacity to sense the essence, often the irony, of a situation. His sense of the fun of living was manifest in an early interest in jazz. Many did not know that George was a jazz buff, or that he was a drummer and played in a Dixieland style band in college days. To the end he delighted in an opportunity to get back to New Orleans to hear again what is there today of the jazz tradition. He had a knack for being where things were happening. A story he would tell more intimate friends might be told now. George had accidentally sustained a slight scalp wound and happened to be on his way home and in the immediate vicinity of the St. Valentine day massacre in Chicago. The Chicago police picked him up and for a while thought they had their solution to the crime.

I have emphasized this side of Dr. Raines' character because his many friends will

remember most intimately and will miss always a companion no one else can quite replace. Dr. Raines and Kate St. Clair married in Mississippi. There are two children. A daughter, Mary Anne Goslen is now a resident of Greensboro, North Carolina. A son, Lt. (j.g.) George N. Raines, Jr., is in the Navy assigned to underwater demolition work and presently serving at Coronado, California.

It would be an error to close without reference to a philosophical trend Dr. Raines seldom made manifest except to those who knew him most intimately. He was deeply religious, and for a number of years had considered becoming a Roman Catholic. It was a step he took with finality at a time during his illness when he was certain of his intention. Thus in death as in life George Raines was a man of deep conviction and had the good fortune to see his most cherished goals realized.

John D. Schultz, M.D.

HUMAN ECOLOGY, DISEASE, AND SCHIZOPHRENIA¹

LORING F. CHAPMAN, Ph.D., LAWRENCE E. HINKLE, JR., M.D.,
AND HAROLD G. WOLFF, M.D.²

The thesis herein offered is that when inappropriate in kind or amount, the adaptive reactions evoked in an individual in response to threat can result in impairment of organ function and in some instances to tissue damage. Evidence will be cited to show that the functional capacity of the brain also may be restricted following prolonged unsuccessful attempts at adaptation. A further elaboration of the thesis is that the reduction in overall adaptive capacity stemming from this impaired functioning of the brain is relevant to serious disturbance of mood, thought, and behavior, including the clinical syndrome of schizophrenia.

HUMAN ECOLOGY

These studies have been carried out within the framework of a concept of human ecology that focusses on the interactions between the individual human subject and his environment (1, 2, 3, 4). The attitude of the naturalist is epitomized in the discipline of ecology, dealing as it does with interrelations of organisms and their environment. Those biologists who have taken the broad view of ecology have seen it as embracing the study of any of the pertinent features of the relationship between living organisms and their natural habitat. The ecologist may be properly interested in any aspect of the environment to which the organism must adapt, with the adaptive mechanisms within the organism and the anatomical structures upon which these are based, as well as in the behavior of whole organisms, and that of the colonies and societies which these organisms develop.

Early in the 20th century the botanist, J. W. Bews (7), suggested that the ecological discipline might be applied profitably to the study of mankind. He saw that those who would deal with problems of human ecology must be prepared to make use of the concepts, knowledge and techniques of many scientific disciplines. To him human ecology is a way of looking at man and of asking questions about him that would be most pertinent to understanding man as a living, constantly adapting organism, never apart from the milieu in which he exists, and constantly interacting with it. Thus, in so far as possible, men would be studied in their natural habitat, behaving as men behave, in the full range of their humanity. This concept has also been evolving independently with us, as a result of our own studies (6, 7, 8, 9, 10, 11, 12, 13).

Such an orientation does not impose the necessity for an intensive investigation of all the factors involved. Indeed, it does not even require the concurrent operation of a "team" of workers with different disciplines, although sometimes necessarily such workers are turned to for specific information. Human ecology is, first of all, the study of man in his setting. Singularly important in this setting are other men, and central to the problem of his health and well-being are his relations to them.

A THEORY OF DISEASE

Claude Bernard (14), the great French biologist of the mid-19th century, was among the first to see disease as the outcome of attempts at adaptation—attempts which though appropriate in kind, are faulty in amount. Since the defensive response in its intensity can be more destructive than the original assault, an individual may be damaged gravely through the wrong magnitude of his defensive reactions. For instance, the presence of microorganisms in the lung calls forth cellular and humoral reactions that counter invasion, and usually do so effec-

¹ Read at the 114th Annual Meeting of the American Psychiatric Association, San Francisco, Calif., May 12-16, 1958. Submitted, revised, for publication Apr. 22, 1960. These studies were supported in part by grants from the Society for the Investigation of Human Ecology.

² From the Study Program in Human Health and the Ecology of Man, and the Departments of Medicine (Neurology) and Psychiatry, The New York Hospital-Cornell Medical Center, New York, N. Y.

tively. Yet their magnitude when excessive can lead to congestion of the lungs, and to pneumonia. This inappropriate adaptive response becomes especially ominous for the individual when tissue is already involved in a long standing over-reaction, as in chronic lung disease.

Claude Bernard's penetrating definition of disease as resulting from the wrong magnitude of attempts at adaptation, deals mainly with primitive biologic levels of reaction. His observations are also true of man, but disease in humans has a more complex meaning because of man's highly developed nervous system.

The unity of mind and body makes man react adaptively or defensively not only to damaging trauma or microbial forces, but also to threats and symbols of danger. Under circumstances perceived as threatening, he inappropriately may evoke primitive metabolic or reproductive patterns that ordinarily serve to maintain the body and the stock. His adaptive and protective patterns are limited in number, and the form of the reaction depends more on the individual's nature and past experience than upon the particular noxious factor evoking it. Since certain bodily and behavioral patterns are called upon to attain goals that can never be attained through their use, such inappropriate reactions are indefinitely protracted. Functions which are usually phasic become continuous. The tissues involved are pressed beyond their limits. Devices that ordinarily serve to protect the body then destroy tissue.

THE THREATENING NATURE OF CHANGING CIRCUMSTANCES

Among the many circumstances perceived as threatening, one of the most threatening is change itself. Rapid and violent social change, by disrupting established relationships, constitutes a serious threat.

Is there evidence that disruptive changes may be relevant to infectious processes? The occurrence of epidemics and increased morbidity from infections among human populations during periods of major change, readjustment and mass dislocation is well known. High mortality from tuberculosis has been associated with increased industrialization during the 19th and 20th centuries

and the resulting migrations from rural to urban life and from one country to another (6, 15). The high mortality has usually been considered the result of exposure to cold and rain, lack of food, excessive effort, crowding, and contact of a migratory population with new and fresh sources of infections to which they had developed insufficient immunity. However, the explanation is probably more complex. For example, in a given society, mortality from tuberculosis has been found to be closely tied to the period in the history of a culture when the use of industrial machines becomes widespread. Mortality reaches its peak about 10 to 20 years after industrialization and thereafter falls off rapidly.

Observations of this kind, led René Dubos (16) the distinguished microbiologist, to conclude:

There is reason to wonder whether any microorganism cannot become the cause of disease if suitable conditions are provided for it. Thus there are many circumstances, some of which are of common occurrence in human medicine, where the physical, chemical, physiological, and probably psychological factors which affect the host, play far more decisive parts in the causation of disease than does the presence of this or that microorganism.

The incidence of hyperthyroidism in Norway increased 100% during the first year of World War II when that country was invaded (21). Other basic endocrine disorders are evident during periods of chaos. Impairment of sexual function with accompanying amenorrhea occurred in nearly all women after interment in the Nazi prison camp of Theresienstadt during World War II and in most of the other camps from which reports are available (18).

STUDIES OF ILLNESS INCIDENCE IN LARGE POPULATIONS

A large-scale study of men and women in the context of their environment, and its relationship to their health, has been made in this laboratory (19, 20, 21, 22). The life stories of more than 500 ostensibly healthy people were analyzed and shorter segments of the lives, of approximately 3,000 observed. These included not only native American, but also homogeneous groups of

foreign-born persons with an entirely different cultural tradition.

Illness was not spread evenly through these populations. In fact, during the prime of life, about one quarter of the individuals accounted for more than one half the episodes of illness. In some groups there were more than 20 times as many episodes of disabling illness in the "least healthy" members as there were in the "most healthy" members. Some individuals had as little as 20 days of absence from work because of illness in 20 years, and others more than 1,300 days in that length of time.

The persons with the greatest number of illnesses had a wide variety of illnesses. Those who experienced a great deal of illness not only had had many minor, but often numerous major disorders of medical, surgical, and psychiatric nature, including infections, injuries, new growth, and serious disturbances in mood, thought, and behavior.

Episodes of illness often clustered during limited periods of time; that is, there might be many episodes in one or more particular years, contiguous with other periods during which few or no illnesses occurred. These periods of high illness incidence corresponded with the periods perceived by the individual as the most threatening.

Within a given population, when the "most healthy" were compared with those who experienced the greatest amount of illness it was evident that physical hardships, geographic dislocation, exposure to infection, rapid social change, and interpersonal problems occurred with almost equal frequency in their lives. There were, however, differences in the two groups. Those most often ill, in contrast to those least often ill, usually viewed their lives as having been difficult and unsatisfactory. They were more inflexibly oriented toward goals, duties, responsibilities. They reacted sharply to events that confronted them. Typically they were in conflict about pursuing their own ends and ambitions on the one hand, and on the other acting responsibly and according to early learned principles about wives, children, parents and friends. They were "concerned" people, who "took things seriously." Most of them were very much aware of their emotional difficulties and their poor

adjustment in interpersonal relations, and many complained about them. They were anxious, self-absorbed, "turned in," unduly sensitive people who sought much support and encouragement.

In contrast, those who were rarely ill often viewed their lives as having been relatively satisfactory. They came of more stable and complete families, capable of and willing to lend more support. In general they viewed themselves as having had preferred sibling positions, good marriages, and rewarding careers.

It was evident that the relationship between the occurrence of illness and "difficult life situations," is not solely with the difficulty of the situation as seen by a neutral observer but is closely related to the amount of threat in the situation *as perceived by the person who experiences it.*

Diseases in which the relationship between symptomatology and the individual's perception of his environmental setting can be seen especially readily have been termed "psychosomatic." But these studies do not support the view that there is a special category of disease to be designated by this term. With the exception of those instances of grave inborn functional or structural errors that early in life narrowly limit the range of adaptability, either at its simple biological or the more complex neurobiological level, it was seen that symptomatic illnesses of all kinds arise in and are remarkably influenced by environmental circumstances perceived by the individual as threatening.

Disease is the end result of so many interacting factors that the concept of the "cause" of disease in a specific instance becomes almost unmanageable. While it is apparent that inappropriate adaptive responses to threat contribute especially heavily to the initiation of certain syndromes, such as gastrointestinal ulceration or vascular headache for example, the data of these studies also indicate that it is erroneous to establish a separate category of disease in which these inappropriate responses are the primary or sole etiologic factors. Rather, inappropriate adaptive responses mediated through the central nervous system are implicated to some degree in disease of many categories including infectious, degenera-

tive, neoplastic, and psychiatric. Reactions evoked during unsuccessful attempts at adaptation, even when integrated at high levels of brain function and involving widespread physical and chemical processes, are not necessarily accompanied by outward evidence of emotional disturbances or even by the individual's awareness of an altered feeling state. Bodily illness, on the one hand, and disturbance of mood, thought, and behavior, on the other, are thus best seen not as causally related, but as each being a component of the individual's total response to his internal and external environment.

What reference have these points to longevity and to death? There are hints from other sources that years of life can be pressed out of man by catastrophe or prolonged duress. Physicians often see sudden and unexplainable death come to those who are overwhelmed or filled with despair. There is evidence that "bone pointing," "hexing" and excommunication of transgressors of tribal mores may remarkably shorten life if not immediately kill a man(23, 24).

ECOLOGICAL IMBALANCE, IMPAIRED ORGAN FUNCTION AND TISSUE DAMAGE IN MAN

Studies from this laboratory have demonstrated that many of the body's organs become more readily damaged during or following periods perceived by the individual as threatening: vasodilatation, edema, diapedesis, hemorrhage, erosion, increased friability of tissue, lowered pain threshold and impaired organ function have been observed in the skin(25), nose, airways(26), stomach(27, 28), colon(29), bladder(30, 31), vagina(32), and in the subcutaneous tissues of the scalp(33). These changes could be induced or terminated rapidly by appropriate alteration of the environment, as by interviews which augmented or decreased the perception of threat.

Over the years one organ or system of organs after the other has been studied in persons functioning in the context of their homes and work environment. For example, in a setting which some individuals perceive as presenting a threat of a certain type, the mucous membrane lining of the stomach becomes intensely engorged, its rate of acid secretion greatly accelerated,

and its rhythmic contractions augmented. This is the stomach pattern of a man preparing to eat a meal. Under circumstances that call for entirely different reactions of aggression or striking in anger, the individual has inappropriately evoked an eating pattern. Similarly, the crying-out anger pattern, with hunger—one of the earliest to appear in infancy—may reassert itself in later life during periods of deprivation or repression of longing for emotional support. Since this displacement behavior seen in the eating patterns cannot satisfy such longings, the gastric activity is excessively prolonged and the lining of the stomach may digest itself. Peptic ulceration may ensue(8, 27, 28).

In studies of the large bowel it has been observed that in those who perceive themselves as threatened in a given way, the mucous membranes become engorged and motility and secretion augmented. This is the pattern of ejection, one that could be used in ridding the organism of materials inadvertently taken in, yet it is evoked inappropriately to help the man rid himself of an unattractive interpersonal problem that cannot be dealt with in this way. Abnormal secretions and the by-products of breakdown may then destroy the lining of the bowel, resulting in ulcerative colitis(29).

Observations of the mucous membranes of the nose, upper airways and lungs have shown that circumstances which the individual perceives as threatening may result in engorgement of the mucosae, increase in secretion of mucous, contraction of smooth muscle of the airways, and even spasm of skeletal muscle. Also, the eosinophil and neutrophil cellular content of nasal secretions increases and there is an increase in the number of eosinophils in the circulating blood. The eyes may tear and close. This is the pattern properly evoked by dangerous gases, fumes, dust, and microorganisms and it serves well to shut out, neutralize and wash away. Yet it is also used by some people in dealing with an offensive man-to-man situation. Because of excessive and inappropriate use, the reaction may trigger chronic infection, chronic obstructive disease, and asthma(26). Alterations in the chemical make-up of the secretions within

the lungs may end in tuberculosis by affording an opportunity for organisms to reproduce that otherwise would die.

Under circumstances that threaten an individual's fulfillment of his responsibilities and are met by heightened vigilance, the blood vessels about the head may constrict and the great sheets of muscle of the head and neck go into painful cramp (34-37).

Many skin disorders arise under threatening circumstances because of inappropriate responses of the blood vessels and unusual secretions in the skin (25, 38, 39). Under like conditions, the kidney may be damaged because it gets too little blood, with great outpouring or retention of water and salt (40-45). So also the heart and blood vessels of the body may overwork and contract excessively as though the individual were stopping a mortal hemorrhage, or facing a crisis of fight or flight—when, as a matter of fact, he may be sitting inertly in a chair (46, 47).

When a person feels his prestige endangered, the glands of internal secretion—the pituitary, the thyroid, and the adrenals—may respond as though his very existence were in jeopardy, as by starvation, or by the sudden unusual demands of very low temperature or violent action (48, 49).

Contraction of the muscles of the extremities and back, inappropriately responding to threatening circumstances by preparing the individual for prompt action that never takes place, can cause severe cramps and aches (50).

No organ or part of the body is spared in these inappropriate responses that are so suggestive of the displacement behavior patterns of rats (51) and gulls (52) and fish (53) studied by the animal behaviorists. Yet not all reactions that end as disease in man can be seen as "displacement" patterns. Migraine headache which results from the painful dilatation of the blood vessels of the head coupled with a local sterile inflammatory reaction often occurs not during stressful periods but after their termination (34, 54).

Distention of cranial arteries is a significant factor in vascular headache of the migraine type. Also, it is evident that the accumulation of a pain threshold lowering substance in the walls of these arteries as

well as in the adjacent perivascular, areolar and supporting tissues, is an essential feature of the headache attack. Accordingly, attempts were made (55) to define the properties of perfusate collected during migraine attacks from subsurface tissues in the region of the temporal and frontal vessels of the head. The specimens collected from the head during headache attacks predictably contained a substance that could be distinguished from serotonin, ATP, substance P, acetylcholine, and histamine although these and other substances could also be present. This agent relaxed isolated rat duodenum, contracted rat uterus and depressed the blood pressure of the rat. The substance has many of the properties of bradykinin, but when analyzed quantitatively using several assay procedures it was evident that it is not identical with bradykinin, but closely resembles the vasodilator polypeptide "neurokinin" that has been found in this laboratory (56) to be present in perfusate collected during the onset of axon reflex "flare" in the skin. The amount of active agent found in the specimens paralleled the intensity of the headache attack. The increased content of polypeptide found locally and the relevant protease could account for many of the features of vascular headache of the migraine type: the polypeptide is an extremely powerful vasodilator, it induces pain and lowers pain threshold when reinjected intradermally, and it increases capillary permeability. Vascular headache of the migraine type thus can be seen as the consequence of an excessive accumulation of a neurogenic agent implicated in local vasomotor control, resulting in a local sterile inflammatory reaction.

THE NERVOUS SYSTEM AND PRIMITIVE BIOLOGICAL REACTIONS

A recent series of investigations (38, 52, 58, 59) has focussed on ways in which activity of the nervous system can influence inflammatory reactions and vulnerability to injury. It was demonstrated that peripheral nerve action can result in alterations that both damage the tissue subserved and alter the reaction to injury. Thus, significantly more skin damage occurred in the "flare zone" of an axon reflex than in adjacent

control areas in response to similar amounts of noxious stimulation. Also, immersion of the lower extremities in water at 43° C. resulted in widespread vasodilatation and a transient lowering of the pain threshold and heightened tissue vulnerability as measured on the hand and thorax.

Following standard amounts of noxious stimulation on the forearm during hypnosis, increased inflammatory reaction and tissue damage was observed in subjects to whom repeated and forceful suggestions had been made that the forearm was tender, painful and injured. Diminished tissue damage was observed when the subject was told his forearm was "anesthetic." Recordings of finger pulse amplitude and skin temperature indicated that local vasodilatation following exposure to noxious stimulation is larger in magnitude and persists longer in the "vulnerable" arm; whereas these reactions are minimized in the arm perceived by the individual to be anesthetic.

The subcutaneous tissue of the forearm was perfused with normal saline and the perfusate analyzed before and after an axon reflex flare was induced by faradic stimulation of the skin (or by intradermal injection of histamine) adjacent to the perfused region (56, 58, 60, 61). With the onset of the axon reflex flare, a substance predictably occurred in the perfusate that relaxed isolated rat duodenum, contracted rat uterus and depressed the arterial blood pressure of the rat. A constant ratio of activity on the several test models indicated that the observed effects of the specimens are due to a single substance. The substance did not occur in perfusates collected during non-neurogenic vasodilatation following ischemia of the arm (reactive hyperemia). The name "neurokinin" has been suggested for the substance thus formed during augmented activity of neurons. A polypeptide with the same properties as the agent observed during axon reflex flare as well as an enzyme capable of forming it when incubated with plasma globulin also have been found in the cerebrospinal fluid of some patients with disorders of the central nervous system. Neurokinin and the relevant protease have also been found in perfusate of the cerebral ventricles of laboratory animals during stimulation of the

brain (70) and in perfusates of peripheral nerve during stimulation (71). In addition to its role in the axon reflex of the skin, neurokinin may serve in local vasomotor control within the central nervous system and may possibly have more direct effects on neuronal function.

Enhanced inflammation has been shown to be effective in combatting invasion by microorganisms and in the rapid elimination of tissue breakdown products of injury. The view is proposed that man includes among his adaptive and protective devices, neural reactions integrated at the highest levels that heighten inflammation in the peripheral tissues and increase the local susceptibility and reaction to injury—thus enhancing the protection of the whole organism at the cost of the integrity of a part. Such reactions at times may be essential to survival. But, if evoked inappropriately or excessively, they can contribute to disease since non-noxious stimulation becomes noxious and mildly damaging stimuli result in greater injury.

In brief, neural activity involving the segmental, brain stem, and cortical levels can modify reaction to noxious stimulation in the peripheral tissues so as to augment or suppress inflammation and tissue damage. A change in attitude towards noxious stimulation may thus increase or decrease inflammatory reactions and tissue damage in part through local alterations in vasomotor function with concomitant increase or decrease of proteolytic enzymes, polypeptides and other humoral substances in the tissue fluid.

THE NATURE OF THE HIGHEST INTEGRATIVE FUNCTIONS OF MAN

Through studies of those with loss of tissue from the cerebral hemispheres it was found that the defects characteristic of conventional concepts of "dementia" or "organic brain damage" (defects in memory, judgment, orientation, simple perception *etc.*) were not predictably present unless the loss was relatively large (more than approximately 120 grams). Indeed, the mean verbal intelligence quotient of those subjects with up to 120 grams tissue loss was not different from that of the general intact population. However, even those

with as little as 30 gram tissue loss predictably demonstrated defects in other aspects of their adaptive capacity. Thus it was found necessary to expand the concept of the functions of the cerebral hemispheres.

Several categories of highest level functions have been defined. First are those functions having to do with the expression of needs, appetites, and drives. Fall-off in these functions is manifest in decreased seeking of challenge and adventure, restriction of imagination, lessened human association and exchange, diminished aspiration and striving, abandonment of previously cherished goals, passive acceptance of circumstances, lessened sexual activity, and when the damage is severe, inadequate response to even the minimal requirements of food, shelter, and warmth.

Second, are those functions having to do with the capacity to respond to symbols as substitutes for biologically significant events, thus employing effectively the mechanisms for goal achievement. These enable the individual to anticipate dangerous or propitious circumstances and to learn, perceive, know, remember, arrange, plan, invent, explore, postpone, modulate and discriminate. Important in this category is the capacity to eliminate responses when they are no longer appropriate.

Third, are those functions that enable man, under circumstances of duress, to integrate elaborate behavior patterns of a defensive or protective nature that are appropriate, adequate, socially acceptable, and sustained.

Fourth, are those functions having to do with the maintenance of organization. These, as mentioned above, serve to lend continuity and maintain stability and proper speed of response and are especially important during periods of stress.

The components of the highest integrative functions are not equally fragile. Impairment of speed of response, spontaneity, imagery, creativity, rapid learning, ease of abandoning a pattern when no longer appropriate, capacity for abstraction, and ability to resist the disorganizing effects of stress are evident in subjects with loss of even small amounts of tissue, whereas vocabulary, long utilized skills, behavior patterns, and premorbidly acquired informa-

tion are not significantly impaired until there is a much greater loss of tissue. With major loss of tissue from the cerebral hemispheres, there is progressive inactivity and finally coma and death.

THE HUMAN BRAIN AND ENVIRONMENTAL INTERACTION

There is much to indicate that the brain itself, in integrating highest level adaptive responses, may be damaged as a consequence of improper interaction between organism and environment.

In men, and in some laboratory animals, the development of brain function may be retarded when in infancy they are deprived of suitable challenge, adequate stimulation, the protection of a parent, and opportunities for successful interaction with the environment. There are instances of infants and children raised in relentlessly hostile environments or in those permitting of no continuing human relationship who have not matured (64). Also, aged persons deteriorate rapidly when they are deprived of their work and social responsibilities.

In man total isolation and severely restricted sensory stimulation are followed by temporary impairment of high level brain functions. Men subjected to the prolonged abuse and hatred of their fellows, as in prison, behave as though their heretofore actively functioning brains were severely damaged. They pass through predictable states of progressive impairment, comparable to the impairment observed in subjects with progressive loss of brain substance. Even when sleep and food are adequate, complete isolation, lack of opportunity to talk, repeated failure, frustration, and reviling by other men can cloud the mind and may make a man confabulate, become more suggestible, and cause him to rationalize behavior previously unacceptable (65).

The quantitative methods developed through the study of individuals with cerebral ablations permitted assessment of highest level brain function in ostensibly intact individuals who had experienced prolonged periods of unresolved difficulties in adaptation. It was found that persons with no evidence of gross anatomic disease of the brain but who, for long periods had achieved no effective adaptation and had

experienced longstanding anxiety and other disturbances in behavior and mood (both with and without bodily disorders), exhibited severe thinking and adaptive difficulties. Indeed, they performed in their usual lives and laboratory test procedures as though moderate and sometimes massive amounts of brain had been damaged or removed. Those with effective defenses such as blaming, rationalizing, sublimation, denying, pretending, or withdrawing from participation, showed less deterioration in brain function. But when these defenses were no longer adequate or stress had been too prolonged, these individuals too, demonstrated a persisting impairment of highest level brain functions.

The observed "mass action" relationship between the highest level functions and the aggregates of neurons in the cerebral hemispheres may give a clue to the nature of the process. For highest level functions the number and degree of arrangement of nerve cells is of central importance, and the pattern of specific localized connections, so important for lower level functions, is of lesser significance. Order itself becomes the relevant attribute for understanding of the relationship between the neuron and the highest level functions.

The property of being highly ordered, is of course, not limited to the brain, but is shared by all living cells. However, the density of arrangement within different bodily tissue varies greatly, reaching its apex in the brain. Thus in our view, although all tissues contribute, by virtue of this high density of arrangement and their great mass, the cerebral hemispheres of man contribute more to highest level functions than do other structures. In a sense, then, "mind" may be said to reside in all cells of the body, a view in keeping with the intuition of the ancients who were reluctant to name the brain or any single organ as the sole residence of mind (69).

The concept that the organization of highly ordered systems featured by purposive, self-regulatory, goal-oriented activities is in keeping with the contemporary orientation of biologists. Sinnott (70) defines mind as "whatever directs the development of an organism toward goals set up

within its living stuff." Accordingly the relationship of the brain to the mind is viewed by us as follows: Mind is the aggregate of purpose and needs, arising from the parts and the whole of the human organism, whereas the brain in addition to contributing to purpose, is the organ of means for maximum adaptive versatility to achieve these ends.

ADAPTIVE REACTIONS AND PSYCHOSIS

These considerations of the consequences of unresolved difficulties in adaptation long maintained, encourage an attempt to reassess the place of psychoses within a general theory of disease. The orientation for this effort is derived from the observation that many hospitalized patients with chronic schizophrenia exhibit a serious impairment of functions of the cerebral hemispheres, an impairment with all of the features found predictably in those with major tissue loss from the isocortex of the cerebral hemispheres, but colored and overlaid with special features that make possible the ready differentiation of schizophrenia in most instances (67, 71, 72).

The nature of the process of schizophrenic deterioration is ill-defined, and indeed, it remains uncertain whether schizophrenia is a single disease entity, even though psychoses of the schizophrenic type occur more commonly in some family stocks.

The evidence previously cited indicates that when an individual perceives himself to be dangerously or overwhelmingly threatened for long periods, and some satisfactory level of overall adaptation cannot be achieved, the functions of the brain are impaired (at first readily reversibly and ultimately less so). Schizophrenic psychoses may be initiated in individuals during such periods. But, in this regard, the schizophrenic reaction differs in no essential way from many other human symptom complexes, and in fact in itself allows of no inferences as to the pathological process involved. As indicated previously, infections, metabolic disorders and behavior changes as well as various enzymatic disturbances may all be initiated in such untoward circumstances.

In addition to the demonstration of serious deterioration of the highest integrative

functions in moderately advanced schizophrenic patients, it has been shown that the cerebrospinal fluid of many schizophrenic patients (73-75) contains unusual amounts of a proteolytic enzyme, unusual proteins, occasionally polypeptides and other products of proteolysis. These substances are also found in the spinal fluid of patients with inflammatory and progressive degenerative diseases of the central nervous system and even after periods of augmented central nervous system activity in otherwise intact persons and laboratory animals (62). The occurrence of increased amounts of these non-specific accompaniments of catabolism in those with schizophrenic reactions suggests that a significant (yet perhaps reversible) alteration in metabolism occurs in the brains of patients so classified. Moreover, the accumulated proteolytic enzyme, other agents, and polypeptides in themselves could contribute to impairment of the functions of the brain.

The data about the abnormality in the spinal fluid bespeak only altered function without defining a category of disease. However, the described change in enzymatic content is compatible with the suggestion that in these patients there is a metabolic disturbance within the central nervous system, either primary or secondary.

A working hypothesis for the mechanism of the impairment in the functions of the cerebral hemispheres of patients with schizophrenia may be suggested. Neuronal excitation and alterations in the patterns of neuronal activity during faulty adaptation, if sustained could lead to persisting disorganization of neural patterns. Since for effective integration the highest level brain functions are dependent upon uninterrupted and proper interaction with the environment and suffer rapidly when this exchange is restricted or distorted, prolonged disorganization of neural patterns would further interfere with proper interaction and perpetuate a cycle that could lead to long-lasting impairment. Secondly, the defensive reactions (denying, blaming, shutting out, *etc.*) result in a reduction of proper interaction of the individual with his environment since they limit, distort, or block perception of the environment or

reduce the participation of the individual.

Further, excessive or prolonged neural activity under such adverse conditions may result in the elaboration of substances originating outside or inside of the brain that interfere with neuronal function. An inborn metabolic defect could contribute to this dysfunction.

DISCUSSION

Since man is a tribal creature with a long developmental period, he depends for his very existence on the aid, support and encouragement of those about him. He lives so much in contact with others and he is so deeply concerned about their expectations of him, that perhaps his greatest threat is their disapproval or rejection. Events having to do with his place in his society take on a major significance and man often functions best when his own ends are totally subordinate to the common end. Inversely, when he is frustrated in such efforts, or rejected by his group, the individual may evoke destructive inappropriate adaptive and defensive reactions or even die. Man is jeopardized not only by those forces that threaten survival of self and kin and opportunities for procreation, but he is also endangered when through the actions of others, his growth, development, and fulfilment of individual proclivities are blocked, and even when his esthetic needs and creative potential are not satisfied.

Challenge is essential and some threat is desirable, if not necessary, for proper human development. But threats to the stability of intimate human relations, especially during the dependent years, and those that wipe out hope and faith in men can have "grave effects."

Many persons have a proclivity for reacting to threat with one particular adaptive pattern, for example, one involving the stomach, rather than the large bowel; or with blaming rather than compulsive activity. They may react to threats in this way for many years, using other patterns only now and then: once established many patterns appear to be self-perpetuating. Several members of one family often show similar patterns. However, even though a given person when confronted by a similar situation usually reacts in the same way, when a new significance is attached to the

situation, new adaptive patterns may appear. In the course of a lifetime several different patterns may be established in those who are threatened by numerous circumstances or who only transiently achieve a suitable adaptation.

Man's special capacity to react to *symbols* as though to significant *events*, enhances his ability to perceive threats as well as to increase his satisfactions. How, then, he perceives his immediate environment depends on his inborn equipment and early conditioning as well as on a host of life experiences. Since pain or damage to tissue provokes vigorous general and local protective reactions, symbols of destructive experience can also evoke such reactions, often to a degree far more costly to the individual than the actual effects of the assaults they symbolize. Moreover, aspiration, creativity, abhorrence of boredom and need of change are central aspects of human activity. At times of his greatest vigor, man is ready to abandon the safe, the certain, the predictable and the secure for challenge, increased responsibility, uncertainty, adventure and exploration. The utopias, the idyllic pastoral tranquility he dreams and talks about, he forgoes to fulfil his humanity. In so doing he may seriously jeopardize the adaptative arrangement most compatible with health. Illnesses of all kinds—impairment in function, reversible or otherwise, with and without obvious tissue damage—are aspects of attempts at adaptation during striving to attain human goals.

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PSYCHIATRY, NATURE AND SCIENCE

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MAD, adj. Affected with a high degree of intellectual independence; not conforming to standards of thought, speech and action derived by the conformants from study of themselves; at odds with the majority; in short, unusual.

Ambrose Bierce(2)

In his discussion of psychiatry and the law, Thomas Szasz made a remark which bears an unusual resemblance to the apparently merely cynical and witty one quoted above. He states:

Whenever we try to give a definition of what mental health is, we simply state our preference for a certain type of cultural, social, and ethical order(14).

If this be so, there really is no such thing as a scientific definition of mental health or illness. That such a point of view would lead to many significant changes in both psychiatric theory and practice goes without saying. It seems, therefore, to warrant careful inquiry. Although psychiatrists, being practical men, do not usually welcome philosophic analysis into their professional province, there are times when such inquiry is absolutely necessary to clarify ideas in daily, "practical" use.

I propose, therefore, to explore the philosophic and scientific origins of this viewpoint in order to clarify what seems to be one of the crucial issues of modern psychiatry. Naturally, an exhaustive treatment of this question would fill a volume. However, by a brief survey of the problem, with references to the pertinent literature, some very significant conclusions should emerge. I shall discuss first the classical doctrine of Natural Law, then the viewpoint of modern science on values, and finally the concept of "health" in psychiatry. A few remarks on applied psychiatry will close the paper.

I. THE THEORY OF NATURAL LAW

The idea of Natural Law is stated by Professor John Wild as follows:

By natural law or moral law I mean a univer-

sal pattern of action applicable to all men everywhere, required by human nature itself for its completion(17).

As is obvious from this quotation, the doctrine of Natural Law is based on the doctrine of "human nature." It implies that there is an ideal standard for "all men everywhere" which is attained when our "human nature" is completely realized or fulfilled. Now, while we speak of "human nature" today, we usually do not mean what the originators of the Natural Law doctrine, Plato and Aristotle, meant by it.

The classical conception of "human nature" was based on the idea of "nature," which may be stated as follows: there is in living beings (and in certain other elements of the universe, also) an *active tendency* working toward the realization of the form, essence, or nature of the being in question(1). The essence or nature was determined by the particular species to which the individual being belonged; in fact, this essence or nature *defined* the species(5).

For example, there was in an acorn the active tendency to develop into the end for which the acorn was designed, *i.e.*, an oak. All animals had as their "purpose" the realization of their particular natures, *e.g.*, "dogness," "catness." Man was a more complex being than the other animals, but he too had a nature, which was realizable by a combination of forces. The equation by Professor Wild, of Natural Law with "moral law" indicates that at least one of these forces was the individual's ability to make choices. Other forces included hereditary factors, social class, education, *etc.* But there was for man an ideal which could at least be approximated by some fortunate individuals.

Now, in connection with this doctrine of Natural Law, at least two things need to be said. First, modern science has abandoned it. This abandonment is based on the rejection of "nature," which may be dated in physical science from the time of Copernicus and his successors(12), and in biology

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from the time of Darwin(5). Our view of the physical and biological universe is no longer teleological.² Science may describe *how* an acorn becomes an oak, but it does not postulate any "purposive regulative principle," to use Dewey's term(5), in the acorn actively directing it towards its goal. The concepts "end," "purpose," "nature," "essence," *etc.*, are no longer accepted scientific terms. Science, which in general works according to the principle of not multiplying entities without necessity ("Ockham's Razor"), is able to explain the data presented to it without these concepts. Consequently the idea of a "human nature" and of a Natural Law have been abandoned.³

The second point with regard to this rejected doctrine of Natural Law and of the doctrine of "human nature" is, that these concepts are still to be found in daily scientific (including medical and psychiatric) discourse. It is a purpose of this paper to investigate the derivatives of the theory of Natural Law which are present in current psychiatric terminology and preceding this, to discuss the current place of values in scientific theory.

II. THE DOCTRINE OF SCIENTIFIC VALUE RELATIVISM

The problem of values has of late become the crucial issue in modern social science. This is especially so in political science as it is this branch of knowledge which deals with the formation of policy. The origin and scope of this problem in its relation to political science have recently been the subject of a book, *Political Theory*, by the distinguished scholar, Arnold Brecht (3). Brecht comes to the conclusion that scientific method is the only source of knowledge that can be called "intersubjectively transmissible," *i.e.*, that rests on legitimately communicable evidence(3). He feels that acceptance of scientific method as our sole source of transmissible knowledge implies the acceptance of what he calls "Scientific Value Relativism."

By Scientific Value Relativism, which Brecht calls the "seamy side of Scientific Method," he means: "the validity of the ultimate standards that underline value judgments cannot be established through Scientific Method." This is due not only to the abandonment of the theory of Natural Law, but also to the realization of the "Logical Gulf between Is and Ought":

Deductive analytic logic . . . can add nothing to the meaning of propositions; it can merely make explicit what is implied in that meaning. Inferences of what "ought" to be, therefore, can never be derived deductively (analytically) from premises whose meaning is limited to what "is."

In short, science cannot set goals, cannot tell us what is "good" or what is "bad."

That this doctrine has evoked a storm of controversy may well be imagined.⁴ However, none of the objections, which are dealt with at length by Brecht, can overcome the threefold argument that: 1. Scientific method is the only method which yields transmissible evidence for hypotheses; 2. The doctrine of Natural Law and the idea of nature on which it is based have been abandoned by modern science as not verifiable; and 3. There is no way to bridge the logical gulf between statements of fact and statements of value.

As a result of this admittedly brief examination of the views held by the great majority of contemporary philosophers of science we have reached a conclusion of immense significance: science cannot establish a hierarchy of values. It can, of course, deal with values as *means*, but never as ends. While it may state, for example, that it is "good" to have a certain sort of police system if the greatest amount of individual freedom is the end, it can never say that individual freedom is the highest good or that it ranks high in the "real" value hierarchy.

What this means, further, is that in its inability to set ultimate values, science can-

² For a valuable discussion of the current status of teleology and the concept of "function" in biology, see Nagel(10).

³ On the various concepts of "law and nature," see Whitehead(16).

⁴ For a remarkably subtle and perceptive statement of the grave implications of Scientific Value Relativism, see the writings of Leo Strauss, particularly the Introduction to *Natural Right and History*(12), and the series of collected essays, *What is Political Philosophy? and Other Studies*(13).

not rationally define "the good," i.e., it cannot say what "the good" is. In analogous manner it cannot define such a term as "justice," for "justice" also requires for its proper definition the setting of an ultimate value hierarchy. In the following section we shall examine yet another value term with the foregoing ideas in mind.

III. THE ATTEMPT TO DEFINE "HEALTH" IN PSYCHIATRY

For many years, workers in the field of psychiatry have been concerned with the fact that no really acceptable scientific definition of "mental health" (or "mental illness") exists. Recently, two very able summaries of the literature dealing with this problem have appeared. One is by the social psychologist, Marie Jahoda(7), the other is by the psychiatrist, Frederick Redlich(11). I shall not attempt to summarize the summaries, but shall only remark on their statements about values and on their conclusions.

Jahoda concludes that, "By far the most urgent need in the field is for more knowledge." She does not actually offer a definition of mental health. Her main emphasis seems to be that mental health is more than the absence of mental illness; hence the phrase "positive mental health" in the title of her book. Jahoda's presentation is followed by a statement by Dr. Walter E. Barton, who speaks as a clinician and more-or-less *does* prefer to think of mental health as the opposite of mental illness. As will presently be apparent from the argument of this paper, this issue is not a scientifically legitimate one.

More interesting to our discussion is Jahoda's statement on values:

Actually, the discussion of the psychological meaning of the various criteria [for positive mental health] could proceed without concern for value premises. Only as one calls these psychological phenomena "mental health" does the problem of values arise in full force. By this label, one asserts that these psychological attributes are "good"(7).

In Redlich's paper on the concept of health in psychiatry, he states:

Most propositions about normal and abnormal behavior contain normative elements. We con-

cur with Reider that the question as to normal or abnormal usually turns out to be a question about good or bad(11).

As we have seen above, any statement of what is good or bad is beyond the legitimate range of science, as it always involves a reference to ultimate standards of value. Redlich concludes his excellent discussion of varying conceptions of "mental health" with the following remarks:

We do not possess any general definition of normality and mental health from either a statistical or a clinical viewpoint. In any case, meaningful propositions on normality can be best made within a specific cultural context.

In other words, our attempt to define "health" in psychiatry has not really produced satisfactory results, and we always have to define "health" within a specific cultural context of values. It would seem that our difficulty in defining "mental health" is due *precisely* to the fact that it is not properly a scientific term. In fact, it can only be meaningful when ultimate values have already been postulated by some extra-scientific (e.g., religious, cultural) means. It may be doubted whether any two theorists in the field will ever agree on the same order of ultimate values. Consequently we shall never have a "true" definition of "health" within legitimate scientific discourse, any more than we can have a scientific definition of "justice."

Even the venerable psychiatric terms "neurosis" and "psychosis" are subject to scientific objection on grounds analogous to the objection to the term "health." This is when they are used—as they most often are—simply and loosely as value terms, without reference to a definite scientific hypothesis, such as Kubie's on "neurosis"(8).⁵

For an extremely cogent discussion of many of the issues presented in this paper, from a somewhat different perspective, see the article by Hollender and Szasz appropriately entitled, "Normality, Neurosis and Psychosis"(6).

One might well inquire why it is so easy to work with the concept "physical illness" as contrasted with "mental illness." This is

⁵ Kubie's formulation implies a value judgment as presently stated(8); to that extent it is outside science. But it also contains a genuine scientific hypothesis, which is theoretically capable of being stated in terms that would allow it to be tested experimentally.

the case, I submit, mainly because almost all people in our culture agree about the values associated with bodily function. Absence of pain and other bodily discomfort, plus certain regularities of function, (e.g., food intake, excretion, sleep) are virtually universally accepted values.

But strictly speaking, organic medicine really faces the same problem as psychiatry, i.e., its definition of "health" is essentially not arrived at by scientific inquiry but rather by social agreement. In biology, no less than in psychology, science cannot set goals. The philosopher Morris R. Cohen writes :

We are thus constantly passing value judgments (in terms of final causes) when we speak of things as normal or abnormal, the average man, and especially when we use the term "pathologic." In biology, there is no difference between normal physiology and pathology, except in our point of view as to what we consider the end of the process(4).⁶

Whether or in what fashion a particular case is designated as "disease" depends to at least a major extent on the way it combines two variables : 1. Its ability to cause suffering and/or death ; and 2. Whether or not it brings the individual into conflict with society.

The reason why the definition of organic illness has almost always been (erroneously) viewed as a product of "nature" rather than of "convention" and has thereby had its true character obscured, is that in virtually all cases both society and the patient agree on what constitutes undesirable phenomena, i.e., "illness." This is true, of course, for a considerable portion of psychiatric phenomena as well, e.g., depressions, ob-

sessional states, schizophrenic panic. These states may be characterized by the fact that they cause psychological suffering yet do not bring the patient into any substantial conflict with society. Persons other than the patient agree as to the undesirability of these states because they are able to identify with him. This is true of organic illnesses also.

A second class of phenomena neither cause suffering nor bring the individual into any substantial conflict with society. There is no agreement at all about the labelling of these "borderline" conditions as "disease." Examples are the business man "driven" to success who does not feel "ill," the pacifist, the religious martyr. These are usually labelled as "psychopathology" by theorists who have different standards of value from the individual in question. Along with this group of phenomena one may consider those discussions pertaining to society in general, such as the arresting statement of Kubie's that the neurotic process is pervasive in our entire culture(5). While all these questions are very interesting and, in fact, quite important if properly considered, they can well become the focus for a host of pseudo-problems if considered as questions of "psychopathology" without reference to the issue of ultimate values.

There exists yet a third class of psychiatric phenomena, which society designates as "disease" but in which the patient is not convinced. Examples are paranoid schizophrenia, mania, and some of the sexual "perversions." These conditions in themselves cause no suffering to the individual but bring him into grave conflict with society. (This conflict often does, of course, lead to "secondary" distress.) Persons other than the patient are unable to identify with him because the individual here is engaged in activities (e.g., unusual types of thought process, deviations from the sexual norm) which are perhaps of all human behavior the most subject to social condemnation.⁷

⁶ One can make a valid distinction between organic and psychological medicine as Szasz does in his paper, "Language and Pain"(15). This distinction highlights the philosophic issue of values discussed here. It does so because of the widespread lack of agreement about values in the psycho-social or behavioral area as contrasted with the quite general agreement about values in the organic or physiological area.

The argument of this paper is, however, by no means dependent on such a distinction, for the inability of science to set goals cuts across all dividing lines—however correct they may be—between its various branches. Therefore, even one who rejects dynamic psychology and believes that all "mental illness" is due to chemical factors can still accept the thesis of this paper.

⁷ It is an interesting scientific question just to what extent the very existence of society is dependent on the repression by the majority of persons of tendencies to these particular forms of "abnormal" behavior. It may be added parenthetically that the solution of such a question—like that of any genuinely scientific question—does not require that the investigator make value judgments on the phenomena under scrutiny.

Besides these three groups there also exists what might be called a subclass of psychiatric phenomena which "completes" the possibilities inherent in the "two-variable" system of classification I have used. Here the individual is in distress and is also in conflict with society. I say "subclass" here because usually there is an inverse relation between the distress and the conflict; the patient "acts out" in order to avoid or diminish distress. Thus either distress or conflict predominates and the patient falls into one of the other groups.

In cases where both society and the individual agree, there is no practical problem about the acceptance of the label "sick." Here the psychiatrist has as his job the alleviation of suffering. Should a psychiatrist be consulted where there is a conflict between the patient and society he must decide if he can resolve the problem to the mutual satisfaction of both. If he cannot, he must then decide whom he will serve. Finally, there are the "borderline" cases, such as religious martyrdom, where there is no substantial agreement at all. Such cases do not come to the psychiatrist by way of the consulting room, but rather are of interest to him insofar as he is a scientific student of human behavior.

Psychiatry can study any of the above issues scientifically, provided this is done in a "value-free" context. This does not mean that we blind ourselves to the fact that society deals with these issues in a web of values. It means that we do not *qua* scientists make value judgments which are dependent on a hierarchy of ultimate values. Both Redlich and Jahoda stress the need for more research. In that we are all in agreement. But to expect a scientific definition of mental health as an outcome of such research is to expect the logically impossible.

IV. ON "APPLIED PSYCHIATRY"

The value judgments which are forbidden to enter through the front door of political science, sociology or economics, enter these disciplines through the back door; they come from that annex of present day social science which is called psychopathology.

Leo Strauss (13)

In his paper on psychiatry and the law referred to above, Szasz takes essentially the

same position with regard to the concept of "mental health" as is found here (14). It is important to note why this position is of special relevance in this context. This is so precisely because the influence of psychiatry on law is one of those "borderline cases," referred to earlier, where general agreement about "mental health" does not exist.

The neglect of this consideration has led to a great amount of confused thinking, and to an even greater amount of confused writing, about "advances" in the area of "applied psychiatry." Careful reflection would, of course, show that the very existence of a criminal act on the part of any individual could, under someone's definition of mental illness, be enough criterion to diagnose him as sick. Therefore *all* criminal acts would really be *symptoms* of "illness"; criminal jurisprudence would emerge as a subspecialty of medicine, and (to carry the argument to its logical conclusion) criminal lawyers, judges, and law enforcement officers would be required to go to medical school as part of their training.

If this example appears absurd to the reader, let him reflect that it is simply an extreme expression of what might happen in applied psychiatry if psychiatric "knowledge" is applied without regard for the fact that social consensus is the only way to define mental illness. The confusion in the area of criminal law arises because it is not recognized that the labelling of some acts as due to "illness" and some as due to "badness" is nothing but a purely social or conventional process. The problem is actually one of how to deal with people who commit anti-social acts. Society must solve the problem itself on the basis of its own goals and on the basis of its own judgment as to the best means to these goals. While science may be of aid in the problem of means, it cannot prescribe the ends or goals.

CONCLUSION

It is a purpose of philosophic analysis to clarify the meaning of concepts used in scientific discourse. An attempt to do so has been made here, with special reference to the value-terms used in psychiatry. Such terms as "mental health," "mental illness," "normal," "abnormal," "neurosis," "psy-

chosis," "perversion," "psychopathic" or "sociopathic" personality have been subject to scrutiny. It has been shown that such terms cannot be defined scientifically. Therefore, it is suggested either that they not be used or that a precise statement of the basis of their use in any given case be made. Such attention to our use of language will bring rewards both in the clarity of our discourse and in the elimination of issues hitherto considered unsolved problems of science.

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PSYCHIC INGREDIENTS OF VARIOUS PERSONALITY TYPES

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The "soft underbelly" of psychiatry is its nomenclature. We may know dynamic theory and be effective psychotherapists. But when confronted with the task of expressing our diagnostic impression in clear, short, and precise terms, we sometimes encounter a frustrating semantic block. Either we are not certain a particular psychiatric label accurately describes the condition; or we are subjectively convinced that a certain diagnostic label is appropriate, but have difficulty explaining why.

We need not go into the question of whether the present diagnostic terms should be supplanted by new ones. This time-worn subject has already had its share of argument(1). Instead, we wish to attempt a new approach to the subject: what actual ingredients are to be found in personality types characterized by the clinical labels used in psychiatry? To answer this question we propose to use a relatively new psychological test described in this journal several years ago(2): the Kahn Test of Symbol Arrangement.

This test represents a radical departure from other psychological techniques in that it embodies the concepts of the newer *existence psychiatry*. Instead of exploring projections, it explores the way a person arranges and deals with common symbols of everyday life. Kahn recently pointed this out in a workshop on this test held at the Mount Sinai Hospital in New York(3). One of the many new aspects of the test is that it yields a symbol pattern for each test subject that is characteristic of him and no one else. The symbol patterns, however, fall into well-defined areas corresponding to clinical entities recognized by psychiatry(4). The validity of the instrument in classifying patients into correct diagnostic groups has been demonstrated often(5, 6, 7, 8, 9, 10).

In order to accomplish our purpose it is necessary to reverse the usual procedure of

validating psychological tests. Rather than matching test results with psychiatric diagnoses, we shall attempt to explore the major diagnostic categories by an analysis of the symbol patterns of the Kahn Test. In doing this we must be aware of the possibility that we may be following our own tail. It could be argued that the Kahn Test was first validated on psychiatric opinion from which the symbol patterns were built up. If we now attempt to explain psychiatric nosology by these same patterns, it would seem that we are merely returning to our starting point. This, however, is not so. First of all, the development of the symbol patterns included more than a mechanical matching of patterns with psychiatrically defined traits. Secondly, much of the development of the test centered around capacity to identify membership in a clinical group by means of the symbol pattern alone (11). Mills points out that this is possible because the test uses "the language of sociological entities"(12, 13). Murphy, Bolinger, and Ferriman(9) state:

Finally, by providing definite formulas which are applicable to specific nosological groups, the psychologist has, at last, his chance to attempt to be scientific. . . . The danger of projecting oneself into the test situation, and factors such as the "halo effect" and countertransference are, thus, minimized.

We must first understand that the Kahn Test is scored on 9 apperceptive-abstractive levels. The patient responds to 16 colored or transparent, plastic symbols used on the test. These consist of objects shaped to resemble butterflies, hearts, dogs, stars, a cross, a circle, an anchor, and a parrot. In stating what these objects can represent, the patient's solution can fall into any of the following categories:

- A—Bizarre, autistic (as defined in the test manual) (14).
- B—No symbolization (patient unable or unwilling to comply).
- C—Repeat of previous response (patient states: "same as before").

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- D—Naming what the object is instead of symbolizing.
- E—Associations by shape or form of the objects.
- F—Associations based on color of the objects.
- X—The thing with which the patient associates the test object has the same shape as the test object itself (example: "An anchor represents an anchor on a ship").
- Y—The association represents something with a different shape from the test object; however, the association is tangible (example: "An anchor stands for the ocean, the navy, a sailor").
- Z—The association represents something that is not tangible and also differs in form from the test object (example: "An anchor stands for transportation, travel, adventure, or restlessness").

Each of the above responses is given a numerical weight. This weight corresponds to the statistical deviation of the response in terms of frequency of use from a carefully-screened, normal, control group (11, 15). The use of 500 normal subjects in the formulation of the Kahn Test scores represents a meaningful departure from validity attempts in which only clinical groups are used. Additionally, over 2,000 normal subjects were used in the test's standardization (11, 16).

In addition to the numerical score, the letters designating the category of responses are arranged in order of frequency to form a letter (frequency) element. The combination of the numerical weight with the letter element is called the *symbol pattern*. For a normal individual a typical pattern is: 100-ZYXEFD. This means that numerical score of 100 represents minimal deviation from normalcy. More Z responses than any other type of responses were given; Y responses were next in terms of frequency. The frequency then decreased in the order XEFD with B responses in the minority.

An analysis of the cognitive-behavioral factors associated with the letters was made by Kahn (17). These are briefly summarized as follows:

- A—Divergent from norms as defined by test manual; autistic; deviant in thought processes.
- B—Lacking cognition with no attempt to perform; resistant; evasive; fearful of self.
- C—Rigid; compulsive; unimaginative.

- D—Lacking cognition with attempt to perform; inhibited; emotional blocking.
- E—Apperceptively aware; materialistic.
- F—Artistic; labile; manic.
- X—Form bound; lacking in capacity to emancipate oneself from stimulus; limited powers of abstraction.
- Y—Discerning of reality with only partial emancipation from stimulus.
- Z—Creatively imaginative; idealistic; capable of abstraction in dealing with cultural media.

Using the above characteristics, we shall examine how they apply in exploring the psychic ingredients of the clinical groups tested by the numerous researchers with the Kahn method (5, 6, 7, 8, 9, 10, 11). This method will furnish a basis for understanding the nature of these clinical groups never previously afforded us. Kahn has found the following *symbol patterns* typical:

VERY SUPERIOR NORMAL²

125+; Z is first letter in pattern; YX or XY follow Z.

Discussion: The numerical element of the *symbol pattern* seems to be correlated with the I.Q. among normal children (18) as well as among normal adults (1, 18). From the letter element of the *symbol pattern* we find that active imagination and idealism predominate in the psychic make-up. Rigidity (C) and Inhibition (D) do not take precedence over Reality Discernment (Y) and Form Adherence (X).

NEUROSIS

71-89; either Y precedes X and Z or B, C, or D appear in the first two letters.

Discussion: First, we note the lowering of the numerical element indicating loss in overall efficiency. (The approximate percentage of loss can be estimated by comparison with the obtained I. Q.) Z responses no longer dominate. The relatively greater frequency of Y responses signifies a "return to the stimulus," a lack of emancipation. Loss of active imagination and idealism are indicated. Kahn points out (11) that in some types of neuroses, B dominates, indicating anxiety or depression. In these cases "fear

²Typical *symbol patterns* cited in this paper are all taken from Clinical Manual, Kahn Test of Symbol Arrangement, pp. 154-5(11).

of self" is dynamically significant. Among hysterical neuroses, D is usually prominent as symptomatic of inhibition and emotional blocking. Obsessive compulsives may have a number element much higher than other neurotics indicating an intactness of intellectualizing processes. However, as Kahn points out, in practically all cases C is found among the first two letters showing the compulsive to be rigid, inflexible, and unimaginative.

CHARACTER AND BEHAVIOR DISORDER

51-70; X precedes C and Y; C prominent; Z weak or absent.

Discussion: The authors have often pondered over the paradox that the characterological patients (the "psychopaths" or "sociopaths") are held legally most responsible for their actions. Yet they are probably the only ones who are morally innocent. This represents one of the frustrations of legal-medical psychiatry. Perhaps it can be explained in terms of the law's unexpressed desire to protect society from these people. Virtually, by definition, the characterologically defective individual, having a defective superego structure, fails to comprehend moral implications of antisocial acts. He lacks the mechanism for this comprehension except on an abstract, intellectualized level. He views the world as a place where everyone "takes advantage." He then retaliates in conformity with his own warped norm of antisocial behavior.

As one would expect, symbol functioning is significantly lowered under such conditions. The predominance of X responses shows the characterological patient to be incapable of emancipation from the immediate stimuli about him. He suffers from a "fixed focus" so to speak (high C), and is as rigid and compulsive as the obsessive compulsive neurotic. He lacks, however, the neurotic's high Y, and has a significantly lower overall numerical element in his *symbol pattern*. This indicates a far lesser capacity than the neurotic to communicate in the "language of sociological entities" (12).

It is of great interest to note that the typical *symbol pattern* of persons with characterological orientations corresponds to that which is found among average pre-adolescents (11). The total number of letters

in the pattern roughly corresponds to the patient's capacity to utilize various ego-defense mechanisms. Thus it is not surprising that Kahn has found 5 or fewer letters in the pattern to be typical of aggressive and assaultive personalities among characterological persons.

SCHIZOPHRENIA

40-50; either A appears in the first two letters or B, D, and X are spread so that they do not all appear in the first 5 letters.

Discussion: This is only one of several formulas Kahn offers (11) for schizophrenia. He has found that any score below 50 indicates psychosis. The only possible exception to this would be malingerers. The psychotic appears to lack capacity for symbolic functioning along the lines demanded by his cultural environment. The presence of A shows that he has substituted autistic meaning for social meaning. The implication is that he, having withdrawn within himself, is now communicating with himself in a secret language. He is distinguished from the patient with organic brain disease by one of two indices: either the relatively higher A content or the lack of B combined with the use of D and X. In other words, either the subject is autistic, or he attempts to comply but lacks cognition and exhibits limited powers of abstraction. The schizophrenic appears more versatile than the brain-damaged patients. This versatility is reflected in the greater spread of B, D, and X responses so that they are not all found among the first five letters. The relative versatility in the use of ineffectual ego-defenses appears to distinguish the schizophrenic from other psychotic entities in the 40-50 numerical score range.

PSYCHOSIS WITH BRAIN DAMAGE

0-39; B, D, and X all appear in the first 4 letters.

Discussion: The ravages of this disease group are well illustrated by the low numerical element. The emptiness of this illness complex is illustrated by the automatism of naming the object (D responses) instead of symbolizing or abstracting. Lack of capacity to abstract is manifested also by not attempting to perform (B responses). The highest abstractive capacity

present is X, which is a form-bound approach to the stimuli presented in the test.

It is interesting to note the progression of the organic deterioration as reflected on the Kahn Test. Organics with relatively little impairment have a high C (rigidity) component, as well as other signs not expressed in the *symbol pattern* but evident in the clinical evaluation of the total test protocol (11).

SUMMARY

The usual method of validating psychological tests by comparing them with clinically-defined psychiatric categories has been reversed. Instead, various personality types bearing psychiatric labels have been assessed by means of *symbol patterns*. A few examples have been given to illustrate the method. Superior normals are found to excel in creative imagination. Neurotics appear to be only partially emancipated from the stimuli of objects. Persons with characterological personalities appear to have been fixated at a pre-adolescent level of symbol perception. Schizophrenics use symbols autistically. And deteriorated organic patients show a lack of capacity to deal symbolically with their environment except on a concrete and unimaginative level.

These findings are not new and are readily accepted by persons familiar with mental patients. Yet it is interesting that we were able to distinguish the different psychiatric categories by means of *symbol patterns* found typical of the various disease groups.

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FURTHER STUDIES OF THE DOCTOR AS A CRUCIAL VARIABLE IN THE OUTCOME OF TREATMENT WITH SCHIZOPHRENIC PATIENTS

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For a number of years now, we have been carrying out a series of studies designed to establish definite reliability *what makes a difference in determining improvement* in the treatment of schizophrenic patients. These studies have focused on the nature of the transactions between schizophrenic patients and their physicians. More specifically in recent studies, the focus has been on the contrasting personal characteristics of those physicians who have a high proportion of their schizophrenic patients improve, as contrasted with those who have a relatively lower proportion improve.

That certain physicians engage more effectively as therapeutic partners with schizophrenic patients than do certain other physicians was demonstrated in earlier studies (1, 2, 3). This difference in effectiveness is large. In an initial study, 7 psychiatrists who had averaged an improvement rate of 75% in their 48 schizophrenic patients were contrasted with 7 who had a 27% improvement rate in 52 such patients.² For

convenience, the groups were labeled A and B. Both physician groups did equally well with other types of patients; and schizophrenic patients treated by both groups were initially clinically comparable.

A study of the clinical records of these 100 patients showed that trustful communication was highly associated with improvement, and occurred with greater frequency in the experience of the A than of B doctors. It was also found that B doctors tended to be passively permissive or to point out to a patient his mistakes and misunderstandings and to interpret his behavior in an instructional style. The A physicians did little of this, but expressed personal attitudes more freely on problems being talked about, and set limits on the kind and degree of obnoxious behavior. The patients of A physicians were also those who reached the highest levels of excellence of improvement.

It was also found that when the patient's behavior is grasped in terms of meanings and motivations, it becomes intelligible to his physician (and often to him) in terms of human issues and problems of social interaction. This shared intelligibility seems to reduce the patient's alienation, with improved capacity for social self-assertion and an attenuation of clinical "schizophrenia." For example, the apparent lack of accommodation to the social milieu becomes intelligible—more frequently to the A than the B physician—not as just a lack, but as a positive social action expressing hateful and fearful distrust of himself and others. These feelings of pervasive distrust operate to hamper the actualization and use of real inner potentialities for social strength. The development of capabilities for more confident interaction is a major gain when the outcome of treatment is favorable.

¹ From the Henry Phipps Psychiatric Clinic of the Johns Hopkins Hospital. This work has been supported in part by funds from the Scottish Rite Committee on Research in Dementia Praecox of the Supreme Council, Thirty-Third Degree Masons, Northern Jurisdiction, administered by the National Association for Mental Health.

² The appraisal of the patient's condition at discharge is made not only by the physician who treated the patient, but also by the senior resident psychiatrist and by the psychiatrist-in-chief (J. C. W.). Any personal bias of the individual physician is thus, presumably, subject to correction by the clinical judgment of more objective observers. For purposes of a scientific inquiry where the clinical progress of patients is itself used as a major criterion for evaluating psychotherapeutic processes, objective evidence supporting the validity of the appraisal of the patient's progress is desirable. Evidence was sought from the following 4 sources: 1. The disposition of the patient at the time of discharge—whether to community or to another hospital; 2. Evidence of increased participation in social relationships with other patients, as recorded in the nurses' daily notes; 3. Increased participation in the clinic activity programs, as recorded in nursing and occupational therapy reports; and 4. Changes in Behavior Chart markings. The num-

ber of markings in each of the 4 behavior zones during the first 10 days after admission and the last 10 days before discharge were counted and the direction of shift noted. These data supported the clinical appraisals of the patient's progress.

These findings were cross-validated on another set of 18 physicians and their 109 schizophrenic patients.

In a follow-up study on these two sets of patients 5 or more years after discharge, 70% were rated as still improved.

The findings in these studies indicate that schizophrenic patients (70% as a minimum estimate) have latent potentials for becoming personally and socially more effective human beings, and for sustaining this improved status.

A favorable turn in the clinical course is not readily achieved with schizophrenic patients. Our studies show that some physicians seem able to do so more readily than others. In what perspective can a valid understanding of this difference in effectiveness be sought? Is it an expression of differences in the physicians' personalities? Are personal qualities significant, perhaps even crucial, variables in determining the outcome of treatment with schizophrenic patients? Can contrasting personal qualities distinguishing A from B physicians be demonstrated and characterized? And can the relevance of such differences to the outcome of treatment be discerned?

A series of studies has been carried out, designed to explore answers to these questions. Specifically, we have been focusing on the interest patterns of A and B physicians as revealed by the Strong Vocational Interest Inventory. This approach has provided a successful, independent method for discriminating between A and B physicians. Some of the findings from these studies will now be presented.

The Strong Inventory appealed to us as a research tool because it is well standardized and because it is not primarily psychopathologically-oriented but focuses on human interests. It is a test which selects from a fairly wide range those interests which are highly shared by an individual with some groups of his fellow beings, and those interests only slightly shared with other groups. In all, the Inventory matches the interest patterns of any given individual with known interest patterns of individuals in 45 vocations, by a scoring scale ranging from high to low matching. (All tests in these series were machine scored by the Testscor Service in Minneapolis.)

FINDINGS

For the present report, the research material consists of 50 physicians whose therapeutic results with schizophrenic patients is known, and on whom Strong Vocational Interest Test scores were obtained while they were in residency training. Twenty-six of these physicians constitute the first 2 series of physicians (all but 3 who did not take the test) on whom our original studies of styles of clinical transactions with schizophrenic patients were based (15 A and 11 B).³ The remaining 24 physicians represent a separate group accumulated subsequently, on whom Strong Test scores are available and whose therapeutic performance with their schizophrenic patients during their residency training became known.

As an initial step in analyzing this material, a comparison was made of the Strong Test scores of the 15 A and 11 B physicians on whom our earlier clinical studies had been based. From this comparison some interesting findings emerged. There were 3 vocations in which both physician groups scored high: Physician, Psychologist and Public Administrator. In 10 vocations, both groups scored low (Veterinarian, Mortician, Banker and Policeman among others). In 23 vocations the scores in both groups ranged in a random way from high to low (Musician, Minister, President of a Manufacturing Concern, for instance). And in 4 vocations, the B physicians tended to score high somewhat more frequently than the A physicians, but the percentage differences were not great. (Osteopath, Carpenter, Industrial Arts Teacher and Vocational Agricultural Teacher.)

By the scores on 4 vocations, however; it was possible to detect definite differences in the interest patterns of the A and B physicians. These 4 vocations are lawyer and C.P.A. (A's high B's low); Printer and Mathematics Physical Science Teacher (A's low B's high). The actual findings are shown in Table 1. (The differences are at levels of statistical significance between .10 and .02 by the Chi Square Test.)

These empirical findings—the high fre-

³ An improvement rate of 68% or more is used as the criterion for this discrimination throughout these studies.

TABLE 1

DISTRIBUTION OF HIGH STRONG TEST SCORES OF 26 A AND B PHYSICIANS
USED AS BASIS FOR CONSTRUCTING A PREDICTIVE SCREEN

	No.	Lawyer		C.P.A.		Printer		Math. Phys. Sci. Teach.	
		Score		A, B+ or B		A or B+		A or B+	
		No.	%	No.	%	No.	%	No.	%
A Physicians	15	8	53%	9	60%	1	7%	5	33%
B Physicians	11	2	18%	1	9%	6	54%	8	73%

quency of interest patterns for Lawyer and C.P.A. and the low frequency of interest patterns for Printer and Mathematics Physical Science Teacher, which distinguish the A physicians from the B physicians—are independent data constituting a source of possible clues to some distinguishing personal characteristics of each physician group relevant to their different therapeutic results and their different styles of clinical transaction with schizophrenic patients.

DEVELOPMENT OF FIRST PREDICTIVE SCREEN

At various stages in our study we considered in detail how these observations on interest patterns might serve as a predictive device to indicate which physicians would have high improvement rates with schizophrenic patients and which would not.

We had no particular interest in any direct application of such a predictive device in the assignment of physicians to patients. In fact, we wished to avoid any such manoeuvre, intentional or unintentional, because it could bias our investigation. Nor were we concerned to supply others with a practical aid in assigning physicians to patients. Rather we thought that a predictive study, if successful, would serve as a rigorous check on the validity of the differences observed in the first study.

Furthermore, the level of predictive accuracy might serve as an indicator whether the crucial determinants of successful interaction lay in the doctor or in the patient. We have been keeping in mind the possibility that the A doctors might have owed their A rating to the good luck of getting schizophrenic patients who, for some reason, unknown to us, had the knack of establishing confidential relationships, etc.

Such an hypothesis had not seemed to us probable, but it did seem possible. If, however, success in therapy with schizophrenic patients could be predicted in advance, with reasonably high reliability, from indicators of the physicians' characteristics, such a result would support the idea that the crucial determinants of success lay in the physicians.

At one time we tried combining 8 selected vocational scores. We have also tried screening devices based on combinations of 3 or 4 and 5 scores. We have finally developed a 5-point screening device embodying the 4 vocational scores discussed above. The highest point (4) on this screen indicates a full four-point matching of an individual's interest patterns with the grouping of vocations characteristic of the A physicians (high for Lawyer and C.P.A., low for Printer and Mathematics Physical Science Teacher); the intermediate points (3, 2 and 1) indicate matching this grouping in 3, 2 or 1 of these categories. And the lowest point (0) indicates matching in none of these categories. Points 4 and 3 on the screen (matching weighted toward the characteristic A physician constellation) would be expected to predict A physicians. Points 1 and 0 on the screen (matching weighted toward the characteristic B physician constellation) would be expected to predict B physicians. Point 2 on the screen (weighted equally between characteristic A and B patterns) would not be predictive. (Table 2.)

As indicated, this screen was originally developed from the Strong Test scores of 26 physicians on whom our original studies of styles of clinical transaction were based. To check the predictive accuracy of this

TABLE 2

ACTUAL PREDICTIVE CHECK ON PREDICTIVE VALUE OF SPECIAL STRONG
VOCATIONAL INTEREST SCREEN ON NEW GROUP OF 24 PHYSICIANS

Predictive Screen (high score Lawyer, C.P.A. low score Printer, MPST)		Actual Number of Physicians qualifying as:		Accuracy of Prediction
Scale	Predicts	A	B	
4	A	5	1	5/6 or 83%
3	A	3	1	3/4 or 75%
2	A or B	2	2	
1	B	2	5	5/7 or 71%
0	B	1	2	2/3 or 67%

screen, another group of 24 physicians was used. Strong test scores were available on each of these physicians. Predictions were made on each of them, using the screening device, whether they would achieve improvement rates of 68% or more with their schizophrenic patients, or not. When these predictions were then compared with the actual improvement rates achieved with schizophrenic patients, the A predictions turned out to be 80% correct and the B predictions 70% correct. More concretely, out of 10 physicians predicted to meet the A criterion, only 2 failed to do so; out of 10 physicians predicted to fall below this criterion, 7 did so.

These results thus constitute a check supporting the validity of the differences between the interest patterns of A and B physicians observed in the first study. They also support the idea that crucial determinants of success in the treatment of schizophrenic patients lie in the physicians. The cluster of interest patterns represented by high scores for Lawyer and C.P.A., and low scores for Printer and Mathematics Physical Science Teacher presumably contain clues pointing to special qualities in the physician's personality more likely to evoke favorable clinical response from schizophrenic patients. And the inverse constellation of interest patterns presumably point to special personal qualities less likely to evoke acceptance as an effective working partner. Thus compatibilities and incompatibilities between physicians and patients become relevant frameworks of reference for studying the intrinsic nature of the recovery process.

One possibility to be explored is that in-

dividuals represented at the extreme points of the scale comprising this screening device operate from an idiosyncratic stance in their attitudes and values and temperamental disposition in dealing as a person with their fellows; and that each stance is different from the other in some significant way which can be characterized, and brought into relevance to the schizophrenic patient's attitudes and expectations.

DEVELOPMENT OF A SECOND PREDICTIVE SCREEN

In order to explore this possibility further, and to attempt a more detailed characterization of the personal qualities of A and B doctors, it was decided to examine their responses to each of the 400 items composing the Strong Inventory. As an initial step in this procedure, a comparison was made between the actual responses (Like, Indifferent, Dislike) of the original 15 A and 11 B doctors to each item. By this procedure, 23 items were found out of the 400, to which A and B doctors gave contrasting responses at levels of statistical significance of between .02 and .05 by the Chi Square test.

Responses characterizing the A doctors (but not the B's) and those characterizing the B doctors (but not the A's) are listed in Table 3. On the basis of these findings, an 11-point screening device was then developed, embodying the 10 starred items in the Table. The highest point of this screen indicates a matching with characteristic A responses on all 10 items. The lowest point on the screen indicates a matching with characteristic A responses on none of the 10 items (i.e., a matching with characteristic

TABLE 3

CHARACTERISTIC RESPONSES TO INDIVIDUAL STRONG VOCATIONAL INTEREST TEST ITEMS WHICH DIFFERENTIATE 15 KNOWN A PHYSICIANS FROM 11 KNOWN B PHYSICIANS. DIFFERENCES ARE AT LEVELS OF STATISTICAL SIGNIFICANCE OF BETWEEN .02 AND .05, BY THE CHI SQUARE TEST. (THE * INDICATES ITEMS USED IN CONSTRUCTING THE PREDICTIVE SCREEN WHOSE PERFORMANCE IS SHOWN IN THE NEXT TABLE.)

<i>Responses Characterizing the A Doctors (But Not the B Doctors)</i>	
"Like"	*311. President of a society or club *365a. Many women friends
"Yes"	367. Accept just criticism without getting sore 375. Can correct others without giving offense
"Dislike"	59. Marine engineer *60. Mechanical engineer *68. Photoengraver *90. Specialty salesman 94. Toolmaker *185. Making a radio set
"No"	*368. Have mechanical ingenuity
<i>Responses Characterizing the B Doctors (But Not the A Doctors)</i>	
"Like"	17. Building contractor *19. Carpenter *87. Ship officer 121. Manual training 122. Mechanical training 187. Adjusting a carburetor 189. Cabinet making 216. Entertaining others 218. Looking at shop windows
"Dislike"	151. Drilling in a company 290. Interest public in a new machine through public addresses *381. Follow up subordinates effectively

B responses on all 10 items.) The middle point on the screen indicates an equal number of A and B matchings. And points above the middle (upper zone) indicate the net weighting toward A responses; while points below the middle (lower zone) indicate a net weighting toward B responses.

When this screen is used as a predictive

device, the upper zone would be expected to predict A doctors; the lower zone would predict B doctors; and the middle point would not be predictive.

As indicated, this screen was developed from the responses to individual items on the Strong Inventory of the original 15 A and 11 B doctors on whom our early studies of styles of clinical transaction were made. To check the predictive accuracy of this screen, the second series of 24 physicians was again used. When this was done, as shown in Table 4, it was found that the upper zone of the screen performed with 83% accuracy in predicting A doctors. Specifically, out of 12 doctors predicted to meet the A criterion only 2 failed to do so. Likewise, the lower zone of this screen performed with 78% accuracy in predicting B doctors. Specifically, out of 9 doctors predicted to fall below this criterion, 7 did so.

It is thus apparent that this second screen, based on only 10 out of the 400 items on the Strong Inventory, performs as a predictive device with even greater accuracy than the first screen based on the final scores in four vocational categories.

These specific items, identified in one series of known A and B doctors, and cross-validated in a second series, thus provide another set of leads for the task of attempting to characterize special personal qualities distinguishing A and B doctors, to whom schizophrenic patients make such a different clinical response.

ANOTHER VALIDATION STUDY

These findings seem to point quite convincingly to the presence of two opposite sets of qualities in the personalities of the A and B doctors, presumably relevant, perhaps crucially so, to the marked differences in their therapeutic results with schizophrenic patients. At this stage in the studies, the following important questions arise: are these results particular in some way to the special psychiatric milieu and working points of view prevalent in the Phipps Clinic? Or do they have a more general validity—i.e., would doctors with the same differential personal characteristics working in *any* clinical setting with schizophrenic patients have the same kind and degree of differential therapeutic results?

TABLE 4

ACTUAL PREDICTIVE CHECK ON PREDICTIVE VALUE OF SECOND SPECIAL STRONG
VOCATIONAL INTEREST SCREEN ON NEW GROUP OF 24 PHYSICIANS

(Net excess of A or B matchings: number of A minus number of B matchings divided by 2)		Actual Number of Physicians qualifying as:		Accuracy of Prediction (Upper zone vs. lower zone)
Scale	Predicts	A	B	
+5	A			10/12 or 83%
+4	A	3		
+3	A	1		
+2	A	4		
+1	A	2	2	
0	A or B	1	2	7/9 or 78%
-1	B		3	
-2	B		1	
-3	B	1	2	
-4	B	1	1	
-5	B			

An obvious method for clarifying these questions is to make a study, comparable to that on the Phipps doctors, on a sample of doctors trained elsewhere and working with schizophrenic patients in a different hospital setting. If the same personal characteristics of the doctors were found to be highly associated with favorable or unfavorable therapeutic results as has been demonstrated with the Phipps doctors, the general validity of these particular variables as significant influences in the outcome of treatment would be supported.

One such study on a small scale has been made on data provided by a neighboring psychiatric hospital.⁴ This hospital is a completely separate institution from the Phipps Clinic, with its own residency training program which is psychoanalytically oriented, and with a traditional interest in the treatment of schizophrenic patients. Information on the improvement rates achieved by individual doctors treating patients in this hospital was available. Eleven doctors from this hospital were selected for study; 5 who had met the A criterion of improvement rate (68% or better), and 6 who had not met this criterion. Strong Vo-

cational Interest Inventory scores were obtained on each of these 11 doctors. On the basis of each doctor's responses, and scores, on this test, his position on the 5-point screen and on the 11-point screen was ascertained.

The results of this procedure, using the 5-point screen, are shown in Table 5. It will be noted that 5 of the 11 doctors fell in the middle, borderland group (2 A's and 3 B's) which is equally weighted between characteristic A and B scores, and so is a non-predicting zone. However, 6 doctors were located in either the upper or lower zones where an accurate predictive effect is expected. It will be seen that the direction of prediction was accurate in 4 of the 6 instances, or 67%. That is, of 3 doctors predicted to meet the A criterion, 2 did so; and of 3 doctors predicted not to meet this criterion, 2 failed to do so.

Thus, although the numbers are small, the direction of association between personal characteristics and level of improvement rate of physicians trained and working in a different psychiatric setting than the Phipps Clinic was similar to that demonstrated in the Phipps doctors.

This similarity is more strikingly shown by the use of the 11-point screen (Table 6). With this screening device based on 10 of the 400 items making up the Strong Inventory, the separation of A and B doctors

⁴ We wish to thank Dr. Joseph D. Lichtenberg (4) of the Sheppard and Enoch Pratt Hospital for his kindness in obtaining responses on the Strong Vocational Interest Inventory, and for cooperation in our studies.

TABLE 5

ACTUAL PREDICTIVE PERFORMANCE OF 5-POINT SCREEN ON 11 PHYSICIANS
WORKING IN ANOTHER PSYCHIATRIC HOSPITAL

Predictive Screen (high score Lawyer, C.P.A. Low score Printer, MPST)		Actual Number of Physicians qualifying as :		Accuracy of Prediction (Upper zone vs. lower zone)
Scale	Predicts	A	B	
4	A			2/3 or 67%
3	A	2	1	
2	A or B	2	3	
1	B	1	1	
0	B		1	2/3 or 67%

TABLE 6

ACTUAL PREDICTIVE PERFORMANCE OF 11-POINT SCREEN ON 11 PHYSICIANS
WORKING IN ANOTHER PSYCHIATRIC HOSPITAL

Predictive Screen (Net excess of A or B matchings : number of A minus number of B matchings divided by 2)		Actual Number of Physicians qualifying as :		Accuracy of Prediction B responses on 10 items)
Scale	Predicts	A	B	
+5	A			4/5 or 80%
+4	A	1		
+3	A		1	
+2	A	1		
+1	A	2		
0	A or B	1	1	
-1	B		3	4/4 or 100%
-2	B		1	
-3	B			
-4	B			
-5	B			

in the predicted directions is clear-cut. It will be seen that on this screen, only 2 doctors fall in the middle zone (1 A and 1 B). Of the 5 doctors whose screen position, based on their test responses, is in the upper zone, and who would be expected to meet the A criterion in actual therapeutic results, 4 did so—an 80% level of predictive accuracy. And of 4 doctors who fall in the lower zone, and who would be expected *not* to meet the A criterion in actual therapeutic results, none did so—a 100% level of predictive accuracy.

These results, from this one study of a small sample of doctors trained and working in another psychiatric hospital than the Phipps Clinic, constitute supportive evidence of some general validity of the thesis

that the crucial determinants of therapeutic outcome with schizophrenic patients lie in certain personal qualities in the physician. The doctor, it would seem from these studies, is the important, even crucial, variable, in determining the outcome of treatment.

It would be useful to seek further corroboration of the general validity of these findings, by studies of other samples of doctors working in several other hospitals. It is hoped that in time such studies can be carried out.

INTERPRETATION

The empirical findings presented indicate that personal qualities in the physician are important factors in determining the clinical

outcome in the treatment of schizophrenic patients. They also provide clues as to the kinds of qualities associated with favorable or unfavorable outcome.

Certain inferences as to the meanings of these findings may next be considered. What meaning, for example, is to be found in the fact that doctors whose schizophrenic patients show high improvement rates are found by the Strong Test to have interest patterns resembling lawyers? Or that those whose schizophrenic patients show low rates of improvement are found by the Strong Test to have interest patterns resembling printers, and to be mechanically inclined?

One line of thought is that the A's, with interests resembling lawyers, have a problem-solving, not a purely regulative or coercive approach. This is acceptable to the resentful, boxed-in patient likely to respond to prescriptive pressures by more withdrawal, and to mere permissiveness by inertia. Much of the psychotic symptomatology and behavior of the schizophrenic patient, and the nature of the personal issues with which he is preoccupied, seem a direct expression of a special orientation toward authority as external and imposed. His classical inward experience of feeling "controlled" or "influenced" by outside forces both expresses, and is an indicator of his dominant concern with imposed authority. The B doctors, with attitudes resembling printers—black or white, right or wrong—are likely to view the patient as a wayward mind needing correction, an approach likely to alienate him further rather than intrigue him into hopeful effort.

By reason of a basic self-distrust, the schizophrenic patient does not live interdependently by give-and-take in personal leadership and in cultural expectations, but avoids involvement with others. In the A physician he would find the values of responsible self-determination more honored and exemplified than those of obedience and conformity—an emphasis providing an avenue of progress out of his own entanglements in mutinous commitments toward authoritative influences seen as imposed from external sources. The A physicians, in their clinical styles of transaction with schizophrenic patients, reveal a capacity to

be perceptive of the individualistic inner experiences of the patients, while themselves functioning in responsibly individualistic roles. And solutions to the patient's problems are worked out through collaborative exploration of possibilities, rather than in the model of authoritative instruction.

In the B physicians, in contrast, the patient would find an emphasis on value systems weighted more heavily toward deference and conformity to the way things are. The particular rigidity of attitude implied by their mechanically inclined interests and orientation toward precision and a rule-of-thumb approach probably constitutes an actual hindrance to the development of self-trust and social spontaneity in the schizophrenic patient.

Physicians whose attitudes tend to expect and respect spontaneity tend to evoke self-respectful social participation more effectively than those whose attitudes tend to restrict spontaneity by preference for conventionalized expectations. This appears to be the basic difference in attitude between A and B physicians. The doctor whose attitudes to social situations are like those of the lawyer, who assumes that there is leeway for solving individual problems and for achieving individually desired goals within reasonably broad interpretations of society's rules and family expectations has the better prospect for opening up for the patient possible appealing prospects, of discovering personal problems rather than mere frustrations, and thereby eliciting more problem-solving effort and participation in life.

Although the emphasis in this discussion has been on contrasts between A and B physicians, it is evident from the data that considerable overlapping occurs and that there is a borderland group suggesting that a physician might move from a B position to an A position, if appropriately informed and motivated. There is some evidence in our data that shifts of this sort do occur, and that guidance along the lines of interpretation which have been presented does improve the therapeutic effectiveness of physicians with their schizophrenic patients.

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REPORT ON THE SEMINAR PROJECT FOR TEACHERS OF PSYCHIATRIC AIDES¹

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The Seminar Project for Teachers of Psychiatric Aides, co-sponsored by the National League for Nursing and the American Psychiatric Association, has been in operation two years. A total of 18 two-week seminars have been conducted in the 4 states chosen for the pilot area: North and South Carolina, Arkansas, and Tennessee. One hundred and seventy-five nurses completed the seminars. The number of nurses attending from North Carolina (90) was greater than the combined number (85) from the other three states. In one state 35 nurses who had applied for the seminar could not be included because time did not allow staff to remain longer in that state. One other state had 4 nurses who could have attended if time had permitted staff to remain for further seminars. Two states were unable to fill the quota of students for each seminar. This was due in part to a smaller number of nurses employed in these states, as well as reluctance on the part of administration, both nursing and medical, to release their nurses for the two-week period. Also, the seminar staff was unable to visit the individual hospitals prior to conducting seminars, which might have helped to increase interest.

Sixty-nine and one-tenth percent of nurses attending seminars were employed in state hospitals, 15.4% in VA hospitals and the remaining 15.5% were from university, private psychiatric, and general hospitals, or were special students.

The majority (64.5%) of the nurses were under 40 years of age, and the remaining 34.7% were between the ages of 41 and 65. The project, as indicated by the title, originally was intended for nurse instructors of psychiatric aides. Since so few hospitals provide an instructor for aides, the majority (76.5%) of our students enrolled were head nurses (44.0%), and supervisors (32.0%), in-

asmuch as they assumed the major responsibility for teaching aides.

Several interesting aspects regarding the amount of clinical experience of the participating students were noted. It was thought worthwhile to examine the students' backgrounds by age groups in relation to their educational preparation, length of psychiatric experience, job title and number of patients for whom the nurses were responsible. This information was sought to ascertain the feasibility of the individual nurse's ability to teach aides as related to her work assignment. Sixty-one nurses were 21-30 years of age. The average length of experience for this group was 2½ years. Thirty-three of these were head nurses and each was responsible for an average of 185 patients. Fourteen of these younger nurses were supervisors and supervised an average of 572 patients per nurse. Six of the head nurses and supervisors had not had an affiliation or any preparation in psychiatric nursing. It is obvious that young nurses are carrying a tremendous responsibility in relation to their amount of experience and preparation. Older nurses carried even heavier responsibilities in terms of numbers of patients.

The purpose of the seminars was to give nurses working in all mental hospitals an opportunity to improve their understanding of the mental patients, improve nursing care, and learn new approaches in teaching psychiatric aides. Students were required to work directly with patients to give them first hand knowledge about the kinds of problems psychiatric aides deal with daily. Group and individual discussions were held with the seminar instructors to broaden the students' knowledge about the nursing care of the psychiatric patient. Specific emphasis was placed on the ways in which the principles of psychiatric nursing can be taught to aides.

The most outstanding positive result from the experience in the seminars seems to be the nurses' increased self confidence. Many

¹ Read at the 116th annual meeting of The American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

² The National League for Nursing, 10 Columbus Circle, New York, N. Y.

of them had no previous preparation in psychiatric nursing, and had not worked directly with a patient recently, if ever. Many nurses indicated that for the first time they felt they knew what they could do for patients and aides and were more secure about their functioning. This is not surprising when you consider that 37% of the total sample had had no preparation in psychiatric nursing. However, 44% of the total group had had an affiliation in psychiatric nursing during their basic nursing education, but this did not necessarily mean the nurse had worked closely with patients during her affiliation. Eighteen percent of the nurses were graduates of a state or private psychiatric hospital school of nursing.

In an attempt to ascertain the nurse's ability to teach psychiatric aides how to improve the care of their patients, the seminar staff conducted one day follow-up conferences for each seminar group (except in one state where time did not permit). Almost all of the nurses attended these conferences, and participated fully. The staff met with the groups and allowed them to volunteer information about their work, only asking specific questions if they had not been brought out in the voluntary discussion, *viz.*, what kind of help do you now need, and what has been the reaction of aides, other nurses, supervisors, and physicians, to your work, *i.e.*, what kind of support or lack of it have you received?

In general, the kinds of problems they mentioned fell into three main categories: 1. Administrative, 2. Teaching, and 3. Nursing care problems.

In one state the first 6 seminar groups discussed many problems related to *administration*. These concerned work loads, rotation, shortage of personnel, and interstaff relationship problems. The latter related to trying to interpret to nursing and medical administration what they were attempting to do. The last three groups in this state barely mentioned these problems, and focused mainly on nursing care problems. Many of the nursing supervisors had attended seminars by the time these last groups met, which may account for the decrease in administrative problems.

In another state, two seminar groups did not mention administrative problems of any

kind, even though the staff was aware of their many problems. The other two groups in the same state indicated the extreme lack of communication between them and all supervisory personnel, and the lack of support from anyone.

In a third state the nurses from state hospitals indicated they had not worked with aides because of the shortage of personnel. Nurses from general hospitals indicated that they had worked with aides on their units, but they had no support from anyone in nursing service. The nurses felt this was due to the fact that all other nurses in the hospital were critical of the psychiatric service. The psychiatrists however, gave the nurses more responsibility and freedom and encouraged them to work with aides. The nurses from VA hospitals indicated they had worked with aides and nurses, and had full support from nursing service.

Teaching problems as presented by the students from all three states centered around two areas. The first, their attempt to change the aides' attitudes about patients, *i.e.*, that patients were ill, and their behavior was a part of their illness, and not a conscious deliberate attempt to misbehave. The second area concerned specific nursing care problems. The nurses requested further assistance in handling specific behavior problems which their lack of experience and help had prevented them from doing.

One major problem which was common in all states was the resistance from aides who had been employed 15 to 20 years. The resistance ranged from indifference to overt refusal to participate in any way.

In one hospital, the nurses' greatest difficulty was to try to change aides' attitudes and behavior regarding physical violence; *e.g.*, throwing ice water on uncooperative patients and keeping clubs on the ward to threaten patients.

In all three states nurses indicated that they had no problems with the majority of younger aides who were eager and interested in learning and requested assistance. In one hospital the supervisory aide of the male service was in charge of the nurses and this presented unique problems.

At the beginning of the second week of each seminar the nurses were given written directions about aide assignment to assist

them when they began their work with aides. Four to six weeks following their return to their respective hospitals, the nurses were mailed follow-up forms at 2 month intervals, to be returned to the seminar staff within a specified time. The forms were designed to give information about whether or not the nurses had attempted to teach aides, the kind of work they did with them, and their ability to increase their contacts and directly teach more aides. The percentage of forms returned varied for each seminar group. The number of returns of the first follow-up forms ranged from 33.3% to 100%. The returns of the second follow-up forms were less: 1.8% to 87.5%. It was difficult to ascertain accurately the numbers of aides nurses had worked with directly, but from both returns the nurses indicated that they have worked with 364 aides individually. Sixteen nurses indicated they worked with groups of aides, or aides on their wards, but did not indicate the number of aides in each group. We know that some groups contained two or three aides and others as many as 12. Thus 364 aides have been assisted by the nurses individually plus 16 groups of varying sizes.

Many factors have contributed to this variation. Account must be taken of the individual differences among the nurses. Some nurses had less educational background in psychiatric nursing than others, some were older and found it difficult to change their behavior. There was also a marked variation of experience of the individual nurses. In other instances the resistance or lack of it from nursing and medical administration varied. A further factor was the cooperation or resistance encountered from the aides themselves.

A questionnaire sent to all directors of nursing revealed that the total number of nurses employed in the 10 participating state hospitals was 277, while the number of charge aides, *i.e.*, aides in charge of one or more wards, was 597.

The follow-up conferences of each seminar, as well as written follow-up forms, indicated that many of the nurses were able to work more directly with aides and had instituted new methods of assisting aides as a result of the seminar.

A sociologist was employed to conduct a

follow-up study on the 90 nurses participating from one state. All levels of personnel in the hospitals were interviewed to ascertain changes in the nurses' functioning. This particular group of nurses was chosen since it had been at least one year since they had attended seminar and time did not permit a follow-up in the 3 other states.

A preliminary review of the follow-up assessment by the sociologist confirms the enthusiasm which the seminar generated in most of the nurses who attended it. There are indications that some nurses in each of the hospitals which were studied changed their administrative behavior and their mode of dealing with patients. Changes in dealing with patients—reported by nurses and corroborated in varying degree by attendants and physicians—include an awakened individualized interest in patients, and a lessening of covert apprehensiveness about interacting with disturbed patients combined with recognition of the nurse's own reaction to patients. In their administrative activities certain seminar graduates have made conspicuous changes, largely as a result of this learning experience. These include lessened rigidity and resistance to therapeutic innovations which others have attempted to foster, amelioration of specific conditions which were discussed during the seminar, and initiation of organizational and milieu improvements geared toward more vital patient care. It must be noted that the number of persons involved in such aspects, especially the initiation of organizational changes, is small; yet it is noteworthy that the improvements initiated or, at least, facilitated by these individuals have been copied by other hospital personnel—thus being precedents for further advancement.

There appears to have been relatively little formal teaching of individual attendants beyond that specifically assigned to the seminar nurses. But there is evidence that considerable information, unstructured teaching of attendants was initiated through the seminar and continues to the present.

Several states outside the pilot area have wanted to send nurses to the seminars, or have requested that seminars be held in their states. It was possible to include one nurse from Kentucky and one nurse from the National League for Nursing staff.

The Florida State Board of Mental Health has made plans to duplicate the seminars for nurses working in general hospitals with psychiatric units. A Veterans Administration hospital in the pilot area is conducting a series of one-week seminars in their hospital. The nurses who attended the seminars are teaching those who were unable to attend. Another VA hospital is planning a teaching program similar in nature. The Southern Regional Education Board has evidenced interest in continuing a pro-

gram similar to the Project in the 14 states of this area.

The National Institute of Mental Health, which financed the project, granted an extension of 5 months to prepare for publication, a report of the findings of all phases of the Seminar Project.

Recommendations from the report regarding implications for future projects, will be submitted to the National League for Nursing and the American Psychiatric Association.

THE CONSUMPTION OF ALCOHOL AND THE HYPOTHESIS OF RECIPROCAL COMPLEMENTARITY

A. H. HOBBS, PH.D.¹

For centuries man has speculated about phenomena associated with the consumption of alcohol. In comparatively recent years research findings have eliminated some old myths but have also, sometimes, given rise to new inconsistencies if not downright contradictions. This analysis is an attempt to show that at least some of these inconsistencies can be clarified by interpreting such phenomena within the context of a causal nexus rather than by direct cause-and-effect.

The need to describe human reactions as functions of a circular causal nexus rather than as the products of direct cause-and-effect will become apparent, I believe, as some of the inconsistencies in the interpretation of phenomena associated with the consumption of alcohol are cited.

INCONSISTENCIES AND CONTRADICTIONS ASSOCIATED WITH DRINKING

1. In human functioning, alcohol acts both as a stimulant and a depressant. A variety of evidence indicates that the consumption of alcohol depresses neurological functions; even to the degree that death results if a sufficient amount is consumed rapidly enough. Yet history and personal experience abundantly demonstrate that human reactions are stimulated by drinking. Such stimulation takes a variety of forms and varies to a degree which bears no constant relation to the amount consumed. Reactions vary all the way from hysterical gaiety to "crying in your beer." Some people begin to swing from the chandeliers after a few drinks while others steadily and calmly consume drink after drink with no observable effect until, perhaps, they fall flat on their face when they try to stand up!

One problem, then, is how to explain the contradiction of neurological depression and social stimulation. How, furthermore, can the wide range in variety and degree of

stimulation from the same quantity of alcohol be consistently interpreted? Why does the same "cause," in the form of the consumption of a given quantity of alcohol, have such a variety of effects?

Many similar inconsistencies and contradictions could be elaborated on but, for brevity, others will be merely listed, and only a few will be analyzed with the technique of the causal nexus.

2. Alcohol is, and is not, a food.

3. Alcohol does not add to your weight, but drinking can make you fat.

4. Alcohol does not dehydrate you, but it does make you thirsty.

5. The consumption of alcohol may increase sexual desire, but it detracts from sexual performance.

6. The effects of drinking are physiological, but just as truly they are mental and social as well.

7. Alcohol apparently is not habit-forming, but people do become addicted to drinking.

8. Chronic "alcoholism" is a medical condition and a psychological state of mind, but it is most successfully treated as a moral and ethical problem.

9. The most highly trained and skillful psychiatrists usually fail in their attempts to treat chronic alcoholics but the most stupid skidrow bum may contribute vital help in treatment.

Some modern studies attempt to resolve such contradictions by describing drinking as a strictly cause-and-effect, quantitative phenomenon(1), contending that intoxication occurs only when the concentration in the blood reaches 0.15%. Proceeding on this unrealistic assumption, "scientific" formulas have been developed to delineate precisely the amounts of various alcoholic beverages needed to produce this concentration. According to these formulas, it is extremely difficult to get drunk, and our modern "scientific" research has now established that it is impossible for anyone to get drunk on beer!

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THE HYPOTHESIS OF RECIPROCAL COMPLEMENTARITY (2)

The argument here presented is that most such inconsistencies can be clarified by thinking in the context of a causal nexus which is part of the process of interpreting human reactions in accordance with the Hypothesis of Reciprocal Complementarity.

Based on evidence from muscular, glandular, and mental functioning, the hypothesis of reciprocal complementarity views human reactions and relationships as patterns of circular causality which can be initiated, facilitated or inhibited by any one of the several elements involved; these being muscular functioning, glandular and other chemical influences, mental coordination and mental imagery, and external stimuli, including moral codes and ethical precepts.

Since the higher levels of the brain have the capacity to fit reactions into a pattern which is meaningful in terms of the external environment as well as in terms of the internal environment of the body (3, 4), their functioning in the form of conscious thought is one of the elements which can initiate, facilitate, or inhibit human activity. With this capacity, the individual is an active determining agent in his responses rather than a puppet at the mercy of unconscious drives or of unthinking indoctrination through sub-cortical conditioning. As brain (mind) and muscles and glands (matter) are functionally interrelated, so too is the brain and the moral substance of the environment, the social controls.

External Homeostasis. In a fashion similar to the process by which the various parts of the brain coordinate muscular and glandular internal reactions to keep them in balance which is called *homeostasis*, so the higher levels of the brain strive to coordinate, to make balanced patterns of the moral codes and ethical principles which constitute the social controls. Homeostasis exists in relation to the external social environment as well as in relation to the internal milieu of the body.

Incomplete and Unbalanced Homeostasis. The higher (neopallial) levels of the human brain have the capacity to coordinate internal drives and external social imperatives into patterns which are mean-

ingful in terms of both, fusing the internal homeostasis with the external into intellectually satisfying, emotionally gratifying, socially responsible behavior. Yet the very complexity of these neopallium levels also endows human beings with a capacity to form patterns which are meaningful to the internal tensions of muscles and glands but inconsistent with the social controls, and *vice versa*. Or, the patterns may be crazily inconsistent with both internal and external conditions. Illustrative of the first unbalanced situation would be the rationalization of unchained lust or unbridled brutishness.

A situation wherein external homeostasis is attained at the expense of internal homeostasis would occur when the realities of the internal drives are smothered by arbitrary conventions which deny their existence. Another aspect of the interpretation is that elements of reaction which are separately antagonistic (such as the incorporation of the social controls in the neopallium *versus* the impulses toward emotional reactions which apparently are coordinated in the hypothalamus) combine in reciprocal and complementary relationships to form new functional syndromes of reaction. An example would be the sentiment of love.

In this interpretation, chronic alcoholism, mental disorder, drug addiction, criminality and other socially defined aberrations are a function of imbalanced homeostatic reactions.

INTERPRETATIONS OF CONTRADICTIONS BY RECIPROCAL COMPLEMENTARITY

The contentions which follow are tentative and need more proof though, for brevity, they are stated as positive assertions.

How can alcohol be, at the same time, a stimulant and a depressant? This seeming paradox is resolved if we recognize that the human brain is an evolutionary product. Various parts developed at different stages of evolutionary development. These different parts have different functions (sight, hearing, the rinencephalon or "nose brain" to coordinate activity associated with odors; the coordination of muscular functioning, glandular functioning, etc.). Many of these functions are superficially antagonistic, but the separately antagonistic mental processes

combine in reciprocal and complementary fashion to form functional syndromes. The neopallium of the cerebral cortex is the most recent brain development, hence the most sensitive to stimuli. Functioning in reciprocal and complementary relationship with the lower and earlier developed portions of the brain which coordinate emotional drives, it acts as an intermediary between these lower levels and the external environment(3, 4).

Surgical and pharmacological evidence (5, 6)—together with the testimony of thousands of years of civilized living—indicates that in humans the neopallium has the capacity to coordinate and make meaningful patterns of the moral codes and ethical principles necessary to social life. In a sober state, stimuli conducive to emotional expression from the lower (hypothalamic) levels of the brain must be fitted into these neopallial patterns.

The depressant effect of alcohol is selective, acting first on the most recently developed and most sensitively delicate neurological connections; those which collectively incorporate the pattern of the social controls. With these functions weakened, impulses for emotional expression from the hypothalamus, while absolutely constant, become relatively stronger.

Depending upon his characteristic temperament and his mood of the moment, the drinker becomes gay or gloomy, friendly or aggressive, argumentative or amorous in a measure which exceeds his sober state. Varying degrees of emotional stimulation depend upon the consistency and cohesiveness of the patterns of social control relative to the strength of the emotional urges, and are a function of the rate of absorption of alcohol into the system.

One factor which affects this rate of absorption is the presence or absence of food in the stomach; thus the "lift" from pre-dinner cocktails.

As more alcohol is absorbed, and as time passes, the depressant effect spreads to phylogenetically older levels of the brain affecting first the finer degrees of motor coordination, then gross muscular control. As the speech and visual centers in the brain are affected, speech becomes slurred, vision blurred and motor control lessened.

The same quantity of alcohol has different effects, even upon the same person, dependent upon his mood, the food in his stomach, and his general health. Also, an identical quantity has different effects according to the rhythm of drinking and the passage of time. A given quantity which produces a "lift" early in the drinking fails to give a comparable lift later in the drinking process when the functioning of the lower levels of the brain has also been depressed.

Currently it is supposed that experience in drinking does not affect the rate or degree of the depressant effect of alcohol. It is contended that the experienced drinker subconsciously compensates for successive losses of coordination. He is more adept at covering up his condition than the novice.

Other inconsistencies can be similarly interpreted as an interplay between physiological, neurological and social factors in which no one factor can separately be said to be "the cause." Since I wish to stress distortions of homeostasis which are involved in chronic alcoholism, other seeming contradictions will be only briefly mentioned.

In caloric content, alcohol ranks among the richest of foods but, lacking vitamins, minerals and amino acids(7), it cannot replace tissue nor be stored as fat; so it is, and is not, a food. Alcohol is a source of energy, however, and thus food eaten in conjunction with drinking, not being needed for the energy which is now supplied by alcohol, may be stored as fat. Similarly alcohol, having a strong affinity for water, draws it out of the cells of the body and brain, and while the total quantity of water is not reduced (that is, the physiological factor is constant) we still, psychologically, feel thirsty.

Through depressing the pattern of social controls in the neopallium, alcoholic consumption relatively increases sexual and other emotional urges. Since the sexual reaction necessitates a high degree of muscular coordination, however, the performance deteriorates as the fineness of motor coordination is blunted.

Subconscious or conscious awareness that the pattern of social controls was distorted during drinking gives rise to guilt feelings

characteristic of hangovers. If the distortion was mild, it can be joked about as merely silly. In more extreme instances the pattern is ruptured to a degree which cannot be fitted into any sensible pattern of social conduct and the drinker has a "black-out" which expunges the incidents from his memory. During the hangover the neopallial levels have sloughed off the depressant effects of alcohol while the lower brain levels have not. Relatively, the social conscience is therefore acutely active. Since the oxidation of alcohol is a continuous process, the lower levels of the brain must continue to function, even during sleep, giving rise to a feeling of physical tiredness as well.

The most effective treatment for the hangover is also the most dangerous. Sooner or later, potentially chronic alcoholics make the discovery that a drink on the morning after works wonders. The efficacy of this homeopathic treatment probably lies in the fact that the caloric content of alcohol gives them an energy lift, while its depressant effect reduces the disparity of functioning between the hyperactive neopallial levels and the underactive lower brain levels, thus reducing the feelings of guilt.

Reasons for contradictions in the interpretation of phenomena associated with alcoholic consumption are the temptation to quantify what is essentially a qualitative phenomenon, and efforts to reduce it to a psychological or even a physiological reaction. Such pedantic forays ignore the overwhelming historical testimony that drinking is essentially a social custom. This social role of alcoholic consumption has been most cogently expressed by my colleague, Professor J. P. Shalloo(8) :

Innumerable references may be found to the choice wines of Greece and Italy by such poets as Hesiod and Virgil. The literature of the Bible makes it clear that at least one of the more formidable figures upon occasion looked upon grape juice too long and too thoroughly but not too critically. Omar Khayyam immortalized the life-giving qualities of wine, while armies and navies were regularly served their rations of grog ; and near the Christmas season of 1940 King George dispatched 70,000 bottles of cognac to the Greek soldiers in Albania. In our times it is culturally imperative to toast the bride, christen the ship, seal the bargain, wel-

come the guest, speed the friend, salute the New Year, celebrate good fortune, wake the dead and even symbolize and ingest the blood of the Savior, through the medium of alcohol.

According to the hypothesis of reciprocal complementarity, a meaningful interpretation of drinking must include this social factor. Chronic alcoholism exists when the essentially social nature of drinking is subordinated to the consumption of alcohol as an excuse to evade social responsibilities.

Attempts to describe chronic alcoholism as a result of the frequency of drinking, the quantity consumed, or even as a function of the compulsive factor, all fail when we realize that most people who should be chronic alcoholics according to such categories, are not.

Now commonly accepted as a description of chronic alcoholism is one which is couched in social, rather than physiological or psychological terms(9) :

The medical definition of an alcoholic, as distinguished from the social drinker, is one whose drinking harmfully and definitely interferes with one or more of his important life activities. He may lose time from work due to drinking, or the quality of his work may suffer, or his homelife harmony may be disrupted, or he may so speak and generally conduct himself that his reputation and relationships with others suffer.

In a context of reciprocal complementarity, an alcoholic has disrupted the homeostatic balance between his emotional urges and the social controls. Subconsciously, he is aware of this distortion, as evidenced by gulping and sneaking drinks and far-fetched rationalizations for his drinking. At home his social guilt reveals itself as he becomes a "closet drinker." At parties, he graciously proffers to be "Mother's Little Helper," insisting that he, rather than the hostess, mix the drinks. He then proceeds to pour one for guest A, and one for himself ; one for guest B, and one for himself ; one for guest C, and a double for himself.

Later he engages in solitary drinking, drinking on lower social levels, bottle-hiding and finally, in the form of the binge, all pretense that his drinking is a social phenomenon is abandoned. I contend that the sole common denominator in the pattern of chronic alcoholism is the progressive in-

crease in the *self* factor in drinking and the concomitant decrease of the social factor. As this occurs, a neopallial pattern of rationalization to justify it becomes more firmly established. A social means to an end becomes a *selfish* end in itself.

Because this pattern of justification is on the cortical level of brain functioning, negative conditioning fails to correct it.

In the process of oxidation, alcohol goes through a phase in which it is converted into a toxic substance, acetaldehyde. Ordinarily the acetaldehyde is almost immediately converted into inert acetic acid. Thus another paradox: alcohol is a poison [toxic] but it is not poisonous. The term "intoxication" is a Nice-Nelly pseudo-scientific designation, far less meaningful than many social designations such as "drunk." Drugs such as Antabuse delay the conversion of acetaldehyde into acetic acid and permit it to accumulate in the system so that one drink makes a person violently ill. If theories of sub-cortical human conditioning had any appreciable validity (which apparently they do not—see reference 4) the alcoholic should soon develop a deep aversion to booze. Since the conditioning is sub-cortical, however, while the pattern which justifies his drinking is neopallial, such an approach is not likely to work.

Apparently a similar, perhaps identical process is involved in drug addiction(10) :

In the United States before World War I, patent medicines containing opiate ingredients were sold without prescription by pharmacists. Some women who took these medicines perhaps mistook the withdrawal symptoms for their illness, and as a result did not become addicted. But other women recognized and attributed their withdrawal symptoms to the remedy, and became addicted. In fact, during the 19th century women comprised about 60 percent of the addicts.

We see here that even in opiate addiction which, unlike addiction to alcohol, is physiological, the cerebral process plays an important role. A similar situation occurs with people who take physiologically habit-forming drugs in conjunction with illness. Most do not become addicts. Since addiction involves the neopallial levels of brain functioning, sub-cortical negative conditioning usually fails to remedy it(11) :

During recent years many alcoholics seek in sedative drugs a cure for their restlessness, nervous tension, and insomnia. Following a modern psychiatric practice, they take sedatives at night to make them sleep and stimulants, such as dexedrine by day, to wake them up. Their relief is only temporary, for within a few weeks their nervous tension and insomnia are worse than ever and their last state is much worse than it was before.

Similarly, psychoanalytic techniques seem to have little success in treating alcoholism. An interpretation of this failure would be that the analytic theory that excessive drinking is a substitution for repressed homosexual or incestual desires just does not make sense to the alcoholic(12) :

One has often seen these patients treated unsuccessfully by psychoanalysis. Even if the analysis reveals the genesis of his fears it does not cure them. It is only when he has accepted himself as an alcoholic and seeks a way of life that brings him serenity do the fears leave him.

Since neither the physiological nor the psychological (psychoanalytic) treatment enjoys much success one might, superficially, suppose that the problem of chronic alcoholism could be successfully attacked through the social factor in the causal nexus. This approach was tried in the "Noble Experiment," the 18th Amendment. Its failure can be attributed to the fact that an arbitrary imposition of the formal controls also fails to make sense in view of the long history of alcohol consumption and the ability of a majority of people to drink moderately.

Apparently the only approach to correcting the condition of chronic alcoholics which has any appreciable degree of success is Alcoholics Anonymous(13). Much of the success of AA, I believe, is due to the fact that the individual is treated as an active agent who participates in the reorganization of his own neopallial patterns. Also, the process involves a gradual reconstitution of the ruptured pattern rather than an arbitrary or all-inclusive one. First, the alcoholic must recognize, without any mental reservation, that no matter how ingeniously he justifies his drinking his thinking is wrong. He does not take a pledge to swear off drinking forever, but reaffirms his

resolution anew each successive day. Ordinarily he calls upon spiritual assistance to reenforce the fibre of his resolution, and is aided by the social fellow-feeling of others who have gone through a similar experience and who can look to him for help as he can call upon them. Though he stops drinking, he is still an alcoholic. He is a person who is unable to absorb the social controls into a meaningful neopallial pattern which is strong enough to maintain its consistency under the depressant effects of alcohol. He is a person whose balance between the individual urges and his patterning of the social controls is so delicate that it is seriously disrupted by alcohol. When so disrupted, he forms a neopallial pattern which virtually eliminates both the physiological and the social components and in which drinking becomes the psychological solution to all problems.

SUMMARY

Modern as well as ancient attempts to explain phenomena associated with drinking give rise to numerous inconsistencies. Such inconsistencies, I contend, can be resolved only by inclusion of the social factor.

The hypothesis of reciprocal complementarity is a technique which includes the social factor, both as external reality and as internally incorporated into patterns in the neopallium. Internal and external homeostatic equilibria are a function of patterns which involve these social elements as well as the functioning of other mental levels and physiological processes. In this interpretation chronic alcoholism is not, in principle, different from mental disorder (which also, now, is socially defined). Such and similar conditions can be interpreted as a disruption of homeostasis between individual urges and the social controls.

As these controls continue to expand and lose their definition (14) these imbalances, in one form or another, will increase. A

reduction in such pathologies might be ultimately attained through methods of child-rearing and education which contribute toward the formation of firm and consistent neopallial patterns of morality and ethics. Such patterns, however, must involve more than a patch-work of arbitrary conventions. They must, within the limits of the capacity of the individual, allow for expression of the integrity of the person as well as for maintenance of the social controls.

Meantime, some of the principles of AA treatment might, with profit, be incorporated into the therapy applied to mentally disordered patients.

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RECURRENT PSYCHOTIC DEPRESSION ASSOCIATED WITH HYPERCALCEMIA AND PARATHYROID ADENOMA

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Involuntional psychotic depressive reactions are commonly encountered in the fifth to seventh decades, but in many instances, organic causes for such reactions are overlooked. Mental changes associated with hyperparathyroidism, including depression, paranoid states, and schizophrenia have been reported by Barr and Bulger (1930)(1), Eitinger (1950)(3), and Fitz and Hallman (1952)(4). The occurrence of a recurrent depressive reaction associated with hyperparathyroidism and parathyroid adenoma during the involuntional period has not been noted previously, and the following case is reported to emphasize a less known organic cause in the production of depressive symptoms.

Case 1.—B. W., a 67-year-old housewife, was admitted to the Jefferson Hospital on November 1, 1958 with the chief complaint of depression of 2 months' duration.

She related that in 1949, 9 years prior to her present admission, she was treated for a severe depression which occurred following the illness of her daughter. She received a total of 12 electroshock treatments following which her symptoms cleared. She remained completely free of any depressive symptoms until September, 1958 when she developed guilt feelings because of her inability to care for her ill daughter and invalid granddaughter. She complained of persistent headaches, restlessness and loss of appetite. This was accompanied by a profound depression with periods of crying and agitation. She condemned her husband and family for their "lack of interest" in her illness. Upon one occasion she threatened suicide.

Of significance in the past history is a hysterectomy 7 years ago, as well as a partial resection of her tongue for a carcinoma in 1957.

Neurological examination was normal. Psychiatric examination revealed the patient to be withdrawn and completely lacking in spontaneity. She cried frequently during the inter-

view and felt that no one was interested in her problems. At other times during the examination she exhibited periods of agitation and excitement which were manifested by overtalkativeness and anger. No illusions or hallucinations were apparent.

Laboratory studies revealed a normal hemogram. Her urine was cloudy with a specific gravity of 1.012. There was a trace of protein present, but no sugar was evident by qualitative testing. Microscopic examination showed many clumps of leukocytes. A urine culture demonstrated the presence of *Escherichia coli* organisms in the amount of 50,000 organisms per cu. cm. of urine.

A diagnosis of psychotic depressive reaction was made, and she was given a total of 8 ECTs following which she exhibited a greater interest in ward activities. She was discharged on November 22, 1958.

She remained well until March, 1959, when her depression recurred together with symptoms of easy fatigability, constipation, frequency of urination, and mental confusion. She was readmitted to the Jefferson Hospital on March 20, 1959, and again a persistent urinary tract infection was noted. She was given 8 more ECTs and once again showed an improvement of her depression. An intravenous urogram was performed to further determine the cause of this urinary tract infection. It revealed the presence of a massive hydronephrosis of the right kidney with a large calculus in the pelvis of the right kidney. The blood serum calcium level was markedly elevated measuring 6.3 milliequivalents per liter (normal, 4.5) and the serum phosphorous level was 1.85 mgs. per cubic centimeter. An excessive amount of calcium was also present in the urine by qualitative testing.

A presumptive diagnosis of hypercalcemia secondary to parathyroid adenoma was made; and on June 18, 1959, an exploration of the parathyroid area was made. At operation, a large adenoma weighing 5 grams was found attached to the left inferior parathyroid gland. Her post operative course was uneventful with serum calcium levels measuring 4.5 milliequivalents per liter. There were no psychotic trends evident after the operation; and upon periodic examinations, there has not been a recurrence of her psychotic depression.

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DISCUSSION

Mental changes in hyperparathyroidism have been described previously by physiologists who encountered symptoms of depression, weakness, polyuria, and fatigability in patients having an excess of parathormone(2). Psychotic reactions, however, in these patients were rare and only a few cases of depression, paranoia, and schizophrenia were reported (1, 3, 4). The interesting feature concerning psychotic depressive reactions with hyperparathyroidism is that they produce symptoms which are indistinguishable from those exhibited by the rigid, compulsive, self-centered patient who is suffering from an involutional depression. Such was the case in this instance, for the presenting symptoms were consistent with the background of an involutional depression as was the clinical response with lifting of the depression after the electric shock. The recurrence of depressive symptoms 3 months after a second course of electro-cerebral therapy is to be expected in a psychotic reaction that subsequently was found to be present along with hypercalcemia, renal calculi, and hydronephrosis. This patient improved following parathyroid surgery as did other reported cases(3, 4).

From a physiologic standpoint, the high serum calcium concentration is believed to be responsible for the development of the psychotic reactions in hyperparathyroidism; although the exact mechanism is unknown (4). Greene and Swanson(5) reported a psychotic reaction in a hypoparathyroid patient who was overtreated and developed hypercalcemia. The calcium ion is known to depress the central nervous system when the level in the body fluids rises above normal(6). The reflexes become sluggish and the muscles become weak(6). Another side reaction of hypercalcemia is that of

decreased motility of the gastrointestinal tract which produces constipation(6). The symptoms of weakness, fatigability, depression, and constipation due to hypercalcemia can easily be misinterpreted as neurotic.

This case serves to emphasize the importance of excluding chemical causes of depression during the involutional period. The determination of the serum calcium level may be of value in the diagnosis of the less common psychotic reactions seen with metabolic and hormone imbalance, particularly hyperparathyroidism.

SUMMARY

A case of recurrent depression is presented in association with an adenoma of the parathyroid gland. The similarity between the symptoms of the involutional depression and those of hyperparathyroidism are frequently indistinguishable. Chemical factors should be excluded in recurrent depressive states and a serum calcium should be considered as a diagnostic aid in these instances.

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THE OBSESSIVE-COMPULSIVE CHRONIC ALCOHOLIC

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The obsessive-compulsive chronic alcoholic forms an interesting segment of the alcoholic population. This group usually consists of individuals in the middle-life period. With intensified fears, threats and frustrations, they tend to react with increased resentment and an intensification of all neurotic personality features. They resort to alcohol to overcome resulting intolerable tensions, by making some sort of adjustment to their overwhelming neurotic demands. This adjustment is of short duration, and when sober they become more rigid, ritualistic and laden with guilt feelings.

In the obsessive-compulsive, the symptoms, much like those of the other neuroses, arise from a conflict of the instincts. An attempted solution of the conflict results in symptoms which serve as a gratification of the instinctual drive. However, unlike other neuroses, the conflict in the obsessive-compulsive neurosis is not manifested in somatic complaints, but remains entirely in the psychologic sphere, by attaching the affect of the unconscious conflict to relatively innocuous ideas and activity.

Obsessive-compulsive behavior is in its general sense a repetition compulsion. This typifies all maladjustive behavior, and refers to the inability of neurotics to modify their behavior and the need that some of them have for alcohol in an attempt to effect such a modification. Obsessive-compulsive behavior in its specific sense is a peculiar neurotic syndrome. This refers to the ritualized symptom in obsessive-compulsive neurosis. This syndrome is unstable and represents a second line defense against some type of breakdown.

Obsessive-compulsive neurosis refers to a specific syndrome of symptoms which includes hand-washing or other pointless ritualistic behavior; compulsion to count or repeat certain words and phrases; obsessional fear of dirt, germs or of inadver-

tently harming another person. The obsessions are usually accompanied by ritualized precautionary behavior; the hands are washed a certain number of times a day and material must be arranged in a certain and particular way. These obsessions and compulsions are attempts to ward off guilt concerning unconscious sexual or aggressive wishes, or to undo or make reparation for them. The warding-off symptoms represent an attempt to avoid guilt-laden thoughts and to master them simultaneously.

Thus obsessive-compulsive neurosis can be said to be a secondary defense against a reactivation of repressed material, the seemingly pointless rituals serving to avoid the guilt implicit in the precariously repressed needs and fantasies.

As further breakdown occurs, symptoms may develop which are properly classifiable as hysteria, schizophrenia, paranoia, etc. The essential purpose of obsessive-compulsive activity is to ward off or prevent the onset of more serious symptoms.

Symptoms of this neurosis may include:

1. Compulsive rituals (e.g., hand-washing rituals).
2. Obsessive fear of dirt and germs (usually accompanied by cleaning and tidying rituals).
3. Obsessive rumination about trivial and irrelevant matters.
4. Compulsive need to count, or repeat verbal formulas.
5. Compulsive drive to work, or busy self in some activity.
6. Compulsive attendance to detail, often at the expense of the broader, more important aspects of the task.
7. Compulsive adherence to high standards of work, or morality, or to regulation.
8. Compulsive concern for orderliness and tidiness.
9. Compulsive pseudo-attempts at suicide.
10. Compulsive avoidance of feared situations (e.g., crowds) or obsessive fear of certain situations.
11. Compulsive habits or mannerisms (e.g., tics).
12. Obsessive concern with health.
13. Compulsive avoidance or obsessive fear of people.

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14. Obsessive fears of being poisoned, swindled or attacked.

15. Obsessive doubts, vacillations and worrying.

16. Compulsive sexual behavior (*e.g.*, masturbation).

17. Compulsive aggressive or emotional outbursts (*e.g.*, nagging or temper tantrums).

Compulsive behavior is never modified by experience; it is repeated time and again for no logical reason. The individual cannot help behaving as he does. Some unconscious force or tension compels him to express his repressed needs or conflicts in distorted form. All neurotic behavior, and much normal behavior, is compulsive in this general sense.

The obsessive-compulsive who resorts to alcohol does so in an attempt to moderate tensions, anxiety, and guilt feelings, to lessen the pressures of ritualistic behavior, to moderate the force of obsessive thoughts.

Case 1. P.J.M., Caucasian, married, 56-year-old male. He has always had an obsessive fear of dirt and germs, washing his hands innumerable times a day. He carried a cloth saturated with an antiseptic solution with which he opened doors, fearing to come in contact with the door knob. He ruminated about trivial matters, was hesitant in making decisions, would return several times after leaving the house to make sure the door was locked. He is employed as a bookkeeper, does his work efficiently, being scrupulously neat and exceedingly tidy.

Mr. M. began to drink at the age of 40. He would consume a quart of whiskey when he could afford it; at other times he would drink a gallon of wine. He found that drinking helped anesthetize his obsessive thoughts and moderate his compulsive actions and temporarily afforded him some relief.

Case 2. H.P.H., Caucasian, married, 42-year-old male. Compulsive activity consisted of counting and adding up license plate numbers, house numbers and other random numbers which he happened to encounter while in the street. It took him a considerable time to get anywhere if he had to walk. Riding cut down this time, but even then he had to take down as many numbers as he could. This, of course, interfered considerably with his everyday functioning. He was not able to hold down a job, and he drifted from job to job. One ritual that he had to perform every night before he went to sleep was to count the number of lighted

windows in a large apartment house near where he lived.

Mr. H. began to drink heavily at the age of 38, consuming a quart of gin in an attempt to moderate his compulsive activities. While intoxicated he was not so acutely aware of his number counting compulsions and in that way was able to obtain some degree of relief.

Case 3. G.S., Negro, married, 45-year-old female. There is a history of obsessive-compulsive activity of many years duration, with a compulsive concern for orderliness and tidiness; she was constantly getting her house in order, seldom leaving it for other activities. There may also have been a compulsive avoidance of feared outside situations, such as crowds.

Mrs. S. began to drink heavily at the age of 40, consuming a quart of whiskey during a drinking spree. She states that drinking helps free her, at least temporarily, from the steady grip of the obsessive-compulsive activity. "When I drink I am able to relax a little, something I cannot do when I am sober."

Case 4. L.B., Caucasian, 46-year-old married male. He had always had an obsessive concern about his health, carrying a variety of pills and tablets with him for imagined ills. Materials he was working with had to be arranged in certain ways. There was a compulsive need to count and add numbers he came across in his daily activities. He carried a paper bag containing one cigar and two boxes of matches. He did not smoke, but he felt that he had to have the paper bag with him to fend off accidents.

The patient was not able to drive his car over a bridge for fear he would be seized with an impulse to jump off. He would not go above 5 stories in any office building. He was constantly beset by doubts, vacillations and worries.

Mr. B. began to drink at the age of 40. Drinking, he found, helped dull his compulsive activity for a while. It helped to moderate his doubts and worries and thus was afforded some measure of relief.

Case 5. J.K., Caucasian, married 49-year-old female. Obsessive-compulsive activity consisted of hand-washing many times a day, taking 3 hours to prepare for bed, which consisted of taking 3 showers, arranging her hair in a very intricate manner. She would not have knives or scissors in the house lest she injure her children. She was afraid of having rope about the house; this suggested suicide.

She would not eat in restaurants, for fear

the cook might have not washed his hands. She would not pick up anything that fell to the floor for fear of contamination with germs and dirt.

Mrs. K. began to drink heavily at the age of 40, consuming a quart of whiskey during a drinking spree. Drinking helped to becloud her mind sufficiently to afford some degree of relief from her obsessions about suicide and homicide as well as to moderate her compulsive actions in constantly washing her hands.

SUMMARY

The obsessive-compulsive chronic alcoholic is characterized by :

1. Compulsive rituals and obsessive fears.
2. Rigidly controlled emotional reactions.
3. Hypochondriacal trends.
4. Rigid perfectionism of an obsessive-compulsive quality.
5. Compulsive pseudo-attempts at suicide and homicide.
6. Compulsive doubts and vacillations.
7. With intensified fears, threats and frustrations he resorts to alcohol in an attempt to moderate these intolerable feelings, obsessive thoughts and compulsive activities.

One of the objectives of therapy with the obsessive-compulsive chronic alcoholic is

the strengthening of the ego, building up his self-confidence. This is so, in spite of the fact that he has feelings of omnipotence. Generally, it has to be pointed out to him that the use of his defenses may be justified in principle, although it is desirable that some of his methods could and should be modified.

The object is to examine the patient's specific defenses quite minutely and their dynamics unveiled. Obviously, both therapist and patient search for more effective ways of dealing with urgent underlying problems. There should be an exhaustive discussion of the patient's hostility, and methods of channelling it along creative avenues should be undertaken.

How is the complicating factor of alcoholism managed? In most of the cases the use of tranquilizers, Thorazine, Miltown, Sparine, *etc.*, is of value in moderating the craving for alcohol. In the more severe cases Antabuse has proved very effective. In the therapeutic management of the obsessive-compulsive alcoholic it is essential to treat both the neurosis and the alcoholism. The combined psychotherapy-psychopharmacological program as above indicated has proved effective in most cases.

THE SIBLING RELATIONSHIP IN GROUP PSYCHOTHERAPY WITH PUERTO RICAN SCHIZOPHRENICS¹

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THE NEED FOR ADAPTATIONS OF TREATMENT METHODS

There can be little doubt that culture has a striking impact upon personality development(5, 7, 12, 15, 27, 32). By culture, we refer to a unique mode of social life based upon historical patterns of acting and thinking which reflect covertly and overtly organized feelings and perceptions held in common by all those individuals considered "normal" by the community. Culture influences the "normal" person and lends a distinctive coloring to the psychopathology of the abnormal. Recent literature in social psychiatry(1, 10, 27, 28, 39, 41) yields numerous descriptions of culturally-influenced, geographically restricted mental disorders such as *Hsieh-Ping* of Formosa, *Koro* of Malaya and *Arctic Hysteria*, a schizophrenic disorder suffered only by Eskimos and natives of Siberia. Here in Latin America, two somewhat similar, culturally influenced disorders have been identified: the *Susto* phenomenon of Peru and the so-called *Puerto Rican Syndrome*. The major symptomology of *Susto* or "magic fright," as characterized by Wittkower and Fried(39), included the patient's low threshold for anxiety toleration, hyper-excitability, state of depression with an accompanying loss of weight and the delusion that his "soul" had been separated from his body and had been kidnapped by the Earth.

Like *Susto*, the *Puerto Rican Syndrome* is characterized by overwhelming anxiety, bizarre seizure patterns, transient depersonalizations and regressions(29, 31). Not only does the cultural milieu create the conditions for its psychopathology and thus influence content, but also, as Henry(13)

has pointed out, certain methods of treatment may even tend to be consistently effective or ineffective when applied to mental patients representing different racial, cultural and societal backgrounds. While it is true that psychotherapists are becoming increasingly concerned with adapting treatment techniques to the needs of specific patients(33), recognition of the impact that a particular cultural milieu has upon the behavior, interpersonal transactions and attitudes of patients in psychotherapy is apparently a recent phenomenon. The Indonesian psychiatrist, R. S. Slamet Iman Santoso, indicated the difficulties of applying Western psychotherapeutic techniques to the Indonesian and touched upon in-therapy issues when he wrote:

The fact that we physicians learned psychotherapy as a Western concept, via a Western language, adds to the difficulty (of psychotherapy). Not everything expressed in English can be translated into some of the dialects. Nor do some Western concepts and ideas accord with Indonesian ones. In my experience only those persons who have absorbed much of Western ideas are suited to direct psychotherapy. These are few and even for them, though language is unimportant, some Western concepts must be modified to fit Indonesian ways of life . . . psychotherapy has a great future in Indonesia, but it must be guided by extensive anthropological study . . . (14).

It should be clear from the foregoing that the mere transplantation of treatment methods from one culture to another is fraught with questions of relevance, validity and reliability. What is sorely needed is the adaptation of therapeutic techniques for making what has been learned about American and European psychotherapies culturally relevant to other societies.

AN ADAPTED GROUP TREATMENT PROCESS

We have been working for the past 3 years with group psychotherapy for regressed, Puerto Rican schizophrenics, attempting to develop a group process more

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culturally relevant for our patients. The method evolved and its rationale has been described in detail in a forthcoming publication (19).

The major feature of our method of group psychotherapy is the employment of a *three-member team* as therapists representing a healthy family group representing a mother, a father, and a sibling. The father figure is a senior psychiatrist; the mother figure, a mature psychiatric social worker; and, the sibling figure, a young first or second year resident in psychiatry. Our technique is based upon the theory that the re-creation of the family setting with father, mother and sibling surrogates will tend to reactivate earlier the encapsulated traumatic materials of the schizophrenic and to quicken the pace of therapy. While we are aware that our team of therapists was an artificial family for the patients in early sessions because of the lack of intimacy between members, it was presumed that the patients would be gradually stimulated to attach symbolic value to the therapists as parental and sibling figures and would act out their earlier conflicts with each.

Three groups of 8 patients each were selected on the basis of several criteria. Each patient had a confirmed diagnosis of schizophrenia. All were chosen from among our most regressed patients from "back wards." Each had been hospitalized for at least 5 years. In addition, all had previously received almost all the available therapies including individual psychotherapy, physical therapies, conventional group psychotherapy, social and occupational therapies. No stress was placed upon the kind of schizophrenics selected and our groups included paranoids, simples, undifferentiated and catatonic types.

The major techniques briefly summarized, included: (a) the development of conscious affect between a young psychiatric resident (sibling figure) and the group of patients by means of 3 to 4 weeks of play activities; (b) the gradual introduction of the 2 other therapists into the group; and (c) family-centered, group psychotherapy by the 3 therapists with their 8 patients, in order to give patients the opportunity to react to significant persons representing the members of a healthy family. The therapy

team members made consistent interpretations of the relations established with members of the group with the sibling acting as the patient's alter-ego.

The results of this adapted process have been gratifying. Changes in the patients' condition were assessed before, during and after therapy, employing independent psychiatric evaluations, projective testing, ward observation ratings, and a special research battery. Of the 24 patients treated: 11 were rated greatly improved and were discharged from the hospital; 7 much improved; and 6 showed little substantial improvement. A followup investigation of treated cases will begin in June 1961 and results will be reported.

As we have worked with this group process, the concept of the *sibling's relationship* with Puerto Rican schizophrenic patients appears to be an extremely valuable tool for overcoming the intricate difficulties of communication with these patients. The major purposes of this paper were three-fold: 1. To outline our rationale for the inclusion of the sibling as a member of the therapy team. 2. To describe the major maneuvers of the sibling in the team work. 3. To suggest that the employment of the sibling relationship may be a valuable feature of therapy for Puerto Rican and other Latin American schizophrenics.

RATIONALE

Many students of the Latin American family have observed that the Latin male tends to be a dominating authoritarian father figure (6, 11, 17, 23, 24, 37). This generalization is applicable to the Puerto Rican father (2, 26, 35, 40). For example, the anthropologist, Wolf (40), in an analysis of the roles of fathers in rural mountainous areas of the Island, pointed out that the fathers were strict, aloof, authority figures with castrating and threatening aspects. She also suggested that as long as the father was strong and healthy, his growing sons were robbed of much of their self-determination and developed rather dependent and resentful attitudes toward authority.

The Latin father's communication with his children tends to be limited and restricted to personal and non-taboo topics. Of perhaps greater significance is his lack

of communication with his wife. In summarizing an inquiry into problems of communication between husbands and wives on matters related to birth control among Puerto Rican lower-class families, Stycos and his colleagues said :

Male dominance leads some husbands to believe that the sphere of family planning is their prerogative alone, and makes wives reluctant to initiate conversation or action. Moreover, there is some evidence suggesting that when conversation does occur it tends to be one-sided ; i.e., the male talking, the female listening(36).

It can be said that the typical Puerto Rican male is constantly in need to reaffirm his maleness. His concept of maleness may even go back unconsciously to descriptions of heroic individuals in the Middle Ages : the cavalier, the nobleman, the *conquistador*. To be male means to be both authoritarian and domineering as well as a "Don Juan," for he is a firm believer and advocate of the double standard of sexual morality. In the course of proving his maleness, the Puerto Rican father may not be home very often after work for he prefers the company of his male friends or a mistress. However, despite his physical absence he is almost always psychologically present(36, 51).

The self-sacrifice and martyrdom of the Puerto Rican mother is essential to the unquestioned and absolute supremacy of the father. While the husband can exercise great freedom in his activities outside of the home, no such freedom is extended to the wife ; the roles of the married women tend to be restricted to home activities such as raising children and performing household chores. The married woman may be aware of her husband's extramarital affairs, but is expected "to suffer in silence." At an unconscious level, however, in our opinion the married woman often allays her thinly repressed hostility toward her husband through very passive-aggressive manipulations of the males in her family.

The significance in this pattern of family dynamics is that Puerto Rican children, as Wolf and others(20, 40) have pointed out, develop unconscious resentment toward male authority figures. Nevertheless, it appears that Latin males can not function efficiently without strong hierarchical au-

thority. Because of the authority of the father, when children are confronted with personal problems, they will tend to discuss their problems in a more spontaneous and confidential way with an older sibling or peer than with paternal figures. At the same time, however, the first-born son in the family is allocated much "unearned authority" and has more prerogatives than his younger siblings. It has been commonly observed that when a younger member of the family gets in trouble he tends to confide more in his oldest male sibling, who, according to our Latin pattern, is taken for granted as the eventual substitute or surrogate of male authority in the family when the father is absent. Perhaps the intimacy of the sibling relationship is a universal phenomenon in its application ; however, in Puerto Rico and other Latin countries, we would suggest that the sibling relationship is certainly exaggerated due to the conflict with authority.

The schizophrenics in our groups were Puerto Ricans all of whom had been exposed to the Island's family patterns and socialization process. Like the schizophrenic of other cultures, he is painfully distrustful and resentful of other people. This resentment may be due to the severe early warp and rejection he encountered from significant people of his infancy and childhood. As Fromm-Reichmann has so succinctly stated :

The schizophrenic's partial emotional regression and his withdrawal from the outside world into an autistic-private world with its specific thought processes and modes of expression and feeling, is motivated by his fear of repetitional rejection, by his distrust of others, and equally by his own retaliative hostility (which he abhors), as well as by the deep anxiety promoted by this hatred(9).

It is interesting to note that Slavson(33) cites a personal communication from the Argentinian psychiatrist, Dr. Krapf, to document his contention that Latin American patients display a great deal of initial diffidence, uncommunicativeness and resentment to male therapists. In our experience one of the greatest difficulties is to communicate with the schizophrenic at an emotionally empathic level. If the male therapist assumes a paternal role, the schizophrenic

will tend to react by muteness and withdrawal. If the therapist establishes a sibling relationship, feelings of trust and confidence which the patient once shared with his own brothers may be reactivated, facilitating communication and rapport. The sibling relationship is a deliberate therapeutic maneuver aimed at overcoming the schizophrenic's repressed resentment and massive fears of rejection from maternal and paternal figures. His previous sibling relationships do not appear to have undergone the same intense repression. They have been less threatening and have remained more conscious.

THE SIBLING'S MAJOR MANEUVERS

As indicated above, our adapted group psychotherapy begins with 3 to 4 weeks of play activities under the guidance of a male psychiatric resident who represents an older sibling figure. The resident was in complete charge of the 8 patients just as the older sibling is when the father is absent from the home. The major activities during these weeks include games, close-contact sports, picnics, swimming, trips off the hospital grounds and the like. To enhance in-group identification, the resident and patients wore special clothes—the same colored baseball caps, shoes, pants and shirts.

The resident attempts: 1. To get closer to the patients, to establish contact and communication; he begins building the *bridge* which will eventually bring the schizophrenic in interpersonal contact with mama and papa. 2. To gain some insight into the *unconscious* of the patients so that later in the course of therapy he may act as their spokesman or alter-ego. 3. To be able to introduce papa and mama into the therapy group in a way *consistent* with the traditional paternal and maternal roles of this culture.

The sibling is constantly with the patients for these weeks of play. He re-experiences part of his own childhood. He repeats attitudes and behavior toward the patients that he had shown toward his own brothers. He gives the patients material things: candies, refreshments, *etc.*, as brothers often do. He uses body language through physical activities; he deliberately employs sports and exercises as a common language

thus stimulating physical awareness of self. If the patients play poorly, he never criticizes them. He observes and notes the way they behave toward him and toward other patients. He quickly gains many insights into their personalities through their comments, fear, wishes, silences, facial expressions and bodily movements.

Almost all activities are carried out at a non-verbal level. When names are used, only first names or familiar nicknames are employed. Most conversations are in simple, matter of fact language. The resident becomes, in part, a child in the sense of the "childlike" schizophrenic.

A few days before the activity period is terminated, the two other members of the therapy team are introduced to the patients: a male psychiatrist (father figure) and a female therapist (mother figure). In the introduction of the father figure, he merely observes the group, speaks briefly to patients and leaves. Introducing the mother figure is associated with meeting the oral needs of the patients: she brings them cool drinks, candies, pudding, *etc.* Thus, some of the major cultural aspects of the traditional roles of the Puerto Rican mother, father and sibling are deliberately replicated by their introduction to the group and their maneuvers.

At the end of 3 weeks of intensive play and the introduction of the father and mother figures, the stage is set for the second phase: family-centered, group psychotherapy. To overcome the patients' initial diffidence, uncommunicativeness and other unconscious reactions to the paternal and maternal therapists, the sibling figure serves as the "loudspeaker" for the 8 patients. For example, in the first two sessions, the resident reported to the father figure the behavior and reactions of each patient during the activity phase. As sessions continue, the resident attempted to verbalize *concretely* to and for the patients what he perceived the patients themselves were feeling and thinking. In this respect, our sibling's maneuvers are similar to Rosen's (30) direct analytic procedure of talking directly to and about the patient's unconscious. We agree with Rosen that this technique helps the patient to understand more quickly the meaning of his psychosis as

well as to establish a meaningful communication system between patients and therapists.

It should be noted in reference to the sibling's group transactions and maneuvers that we do *not* employ the term, *role*, to describe the latter's behavior. To the present writers a *role* is a sociological term denoting specific socially defined and socially expected behavior such as one's age and sex roles (18, 32, 34). Further, *roles* are patterned in accordance with the value orientations of a culture and the behavioral transactions related to *roles* are concerned with the maintenance of interpersonal equilibrium within social units.

Likewise, we use the term, *sibling relationship*, rather than *sibling transference* in our descriptive summary of the sibling's maneuvers. Transference is a poorly understood term (3, 4, 8, 25, 30) and because of linguistic confusion one finds that the term is sometimes misapplied and misused.

The kind of relationship the sibling establishes with patients in our work is not transference, *i.e.*, our patients do not repress much of their earlier attitudes and feelings toward their siblings as is the case when parental figures were involved. In their relationships with the sibling figure, our schizophrenics repeat and relive primarily conscious attitudes which they have shown toward their own siblings in their past lives. What we are doing then is employing a typical, Puerto Rican family phenomenon (the closeness of siblings) as an asset in group psychotherapy for schizophrenics. Whether or not this maneuver would be an effective device for schizophrenics of non-Latin cultures, is a matter of speculation and future research.

SUMMARY

This paper summarizes *one* way a group psychotherapeutic process was made more culturally relevant for Puerto Rican schizophrenics. A three-member therapy team, representing the significant members of a family (father, mother and older sibling), was employed with each group of patients. Attention was focused upon the *sibling's relationships* in the therapy team and the ways in which the sibling's therapeutic maneuvers were employed in overcoming

the intricate difficulties of establishing meaningful communication with the patients. The sibling's transactions in verbalizing the unconscious of the schizophrenic to the mother and father figures results in a rapid resolution of resistance for what was formerly deemed dreadful and secret, and which through repeated sibling verbalizations gradually acquires the appearance of the commonplace.

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CLINICAL NOTES

The Clinical Notes report the findings of the authors and do not necessarily represent the opinions of the Journal.

THE UNIQUE THERAPEUTIC PROPERTIES OF TRANLYCYPROMINE AND TRIFLUOPERAZINE (PARSTELIN)

BURTRUM C. SCHIELE, M.D.¹

The combined use of a CNS stimulant and a CNS suppressant has theoretical merit, particularly for individuals with mixtures of depressive and other symptoms such as fear, anxiety, or paranoid trends. The apparently opposing actions do not cancel each other out, as one might expect. Though the mechanisms of action are incompletely understood, each drug probably affects different "centers"; together they may exert a complementary or synergistic effect. A particularly effective combination is afforded by using tranlycypromine (trans-dl-2-phenyl-cycloproylamine, SKF-385)² as the CNS stimulant and trifluoperazine (Stelazine) as the CNS suppressant.

Tranlycypromine is the most potent monoamine oxidase inhibitor available. It has two unique properties which set it apart from other MAO inhibitors. First, it is a nonhydrazine. This may account for its apparent safety. (The hydrazine moiety may be responsible for some of the serious complications known to occur with some of the other stimulants). The second is its bimodal stimulating action. It has a rapid, direct action similar to that of the amphetamines to which it is related, and it also has the slow, cumulative, indirect action of the other MAO inhibitors.

We are reporting our experience with the combination tablet containing 10 mg. tranlycypromine and 1 mg. trifluoperazine which was used in the treatment of 96 patients.³ Two-thirds were outpatients; treatment varied from a few days to 6

months. The usual starting dose was one tablet in the morning and one at noon. Unless a favorable response was obtained or limiting side effects appeared, the total dosage was increased by one tablet every other day to a usual maximum of 6 tablets daily. Patient tolerance varies widely. Once satisfactory results are obtained, administration of the drug can usually be continued as long as necessary. Like the other MAO inhibitors, this compound has a cumulative action and the dose may have to be reduced for some patients.

The following clinical observations were made:

1. In most cases the medication either works promptly or does not work at all. Results were good in 59 cases, poor in 23, and equivocal in only 12.

2. Twenty-eight patients noticed dramatic relief from tension, depression, fear or depersonalization within a day or two. Inability to tolerate the drug was also discovered promptly. The prompt indication of its effectiveness in a given case is one of this drug's main virtues.

3. No serious complications of any kind were observed, but a number of troublesome side effects did occur. Increased insomnia was a limiting symptom, especially in 10 patients who already suffered from this difficulty; postural hypotension with dizziness occurred in 9; headache was noted in 4 patients and tremors of the extremities occurred after several weeks in 6 patients. These reactions responded to reduction of dosage. Overstimulation or sedative effect was rare.

4. Target symptoms were depression, retardation, fears, fatigue and social withdrawal. The use of this medication should not be limited to depressed patients, since it also appears to help many schizo-adaptive

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² Tranlycypromine will be marketed as Parnate and the combination tablet as Parstelin by Smith, Kline & French Laboratories, Philadelphia, Pa.

³ In collaboration with Dr. Alan Challman, Minneapolis, and Dr. Benjamin Lund, Mankato, Minn.

individuals; in fact, our most striking results occurred with certain "hard-core pseudoneurotic" schizophrenics. Frank schizophrenics may need additional phenothiazine medication.

This medication appears to be sufficiently promising to warrant additional investigation. We have therefore begun a double-blind study in order to determine further its clinical usefulness.

NEURAMINIC ACIDS IN THE CEREBROSPINAL FLUID OF SCHIZOPHRENIC AND OLIGOPHRENIC PATIENTS

GABRIELE CHISTONI, M.D., AND ROBERTO ZAPPOLI, M.D.¹

In a preceding note(1) we have described a new method for determining quantitatively neuraminic acids (NA) in cerebrospinal fluid (CSF). This method allows us to appraise both the free fraction and the protein-bound fraction of the NA, and, by means of anion-exchange resins, makes it possible to eliminate the certain cause of errors by doing away with the hexoses(2).

With this method we have determined the concentration of the NA in the CSF of 50 subjects (13 control persons; 13 oligophrenics; 11 cases of presenile, senile and atherosclerotic dementia; 13 schizophrenics). As we have pointed out(3), the total average concentration of the NA was lower in the 3 groups of patients than in the control subjects. Although the variations already met with in the above cases are of deep significance from a statistic point of view, we have considered it useful to continue our researches on a larger number of subjects, limiting, however, our observations to control persons, oligophrenic and schizophrenic patients.

RESULTS

We report here the results obtained in 76 subjects, divided into the following groups: 26 adult control subjects (12 men, 14 women); 26 oligophrenics (12 men, 14 women); 24 schizophrenics (10 men, 15 women).

The CSF of these subjects, who were submitted to the general laboratory examination (cells count, determination of proteins and sugar, paper electrophoresis, colloidal reactions, R.W.), were all normal.

Control subjects. The individuals belong-

ing to this group were admitted to our clinic for idiopathic cephalaea or cephalaea in consequence of a slight injury to the skull (subjects in whom it was presumed there was no damage to the nervous system). Ages ranged from 17 to 52. None showed any objective signs of neuropsychic trouble; the radiologic and electroencephalographic findings and ordinary laboratory tests were all negative.

The total NA quantity in the CSF of this group varied from 1.8 mg. to 5.3 p. 100 ml. with an average of mg. 3.08.

In 7 subjects in whom the free fraction too was determined, it was seen to be 75-94% of the total quantity.

Oligophrenics. Age range of the 26 oligophrenic subjects: 15 to 40. Nine had a pre-existing brain damage, from infancy; in the other 17 it was not possible to find a cause of the oligophrenia. The mental deficiency had been noticed in all cases at a very early age and was present in a high degree: 16 could be classified as idiots; 4 (ages respectively 15, 26, 38, 40) on the absciss of the Terman-Merrill scale, showed a mental age of respectively 3, 4, 6, 8 years; 6, according to the Wechsler-Bellevue scale, had an I.Q. below 60.

The values of the total quantities of NA in these patients were between 0.3 and 3.5 mg. p. 100 ml. The average of the 26 cases was mg. 1.77, that of the 9 cerebropathic subjects 1.57. In 5 patients of this group, in whom we also determined the free fraction, this was practically absent in 2 cases, in which the total quantity was 0.3-0.4 mg. p. 100 ml., while in the others 3. represented 75-86% p. 100 of the total quantity.

Schizophrenics. The patients in this group had not received any therapy for at least 4

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TABLE 1

Case N.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Control Subjects	2.6	3.1	2.6	2.3	3.3	1.8	4.2	2.3	2.5	3.2	5.3	3.4	2.6	3.4	3.6
Oligophrenics	0.8	2.1	0.3	1.9	0.7	0.4	3.2	2.5	1.2	2.3	0.5	1.9	1	2	2
Schizophrenics	1.5	1.8	1.2	0.9	2.3	2.9	2	1.5	2.1	2.3	1.6	1.1	2.3	3.2	2.1
Case N.	16	17	18	19	20	21	22	23	24	25	26	Average	σ	t	P
Control Subjects	2.9	3.2	1.8	4	3.4	2.2	2.8	2.5	5.1	3.1		3.08	± 0.73	--	--
Oligophrenics	2.9	3.5	2.9	2	1.6	1.6	2	1.3	2.2	1.2	2.4	1.77	± 0.73	6.2	<0.001
Schizophrenics	2.5	2	2	2	1.5	1.1	1.3	1.2	2			1.84	± 0.31	5.4	<0.001

Values, in mg. p. 100 ml., of the total quantity of Neuraminic Acids present in the cerebrospinal fluid.

σ = average square waste.

t = parameter of Student-Fisher calculated in comparison with the controls.

P = percentual of chance probability.

months. Eight were hospitalized for the first time. Their ages were between 17 and 42. The symptomatology was typical: simple schizophrenia (3 cases), hebephrenic schizophrenia (12), hebephrenic-catatonic (1), catatonic (2), paranoid schizophrenia (6).

The values of the total quantity of NA varied from mg. 0.9 to mg. 3.2 p. 100 ml.; the average of the 24 cases was mg. 1.84. In 5 patients of this group we determined both the total quantity of NA and the free fraction: the latter represented 65-83% of the total quantity (Table 1).

From these data we see that the NA concentration in the CSF showed ample variations in the three groups considered; keeping to the averages, the total quantity of the NA is less in the two groups of mental patients than in the control subjects: 43% less in the oligophrenics and 41% less in the schizophrenics. We have calculated on the basis of our data the parameter *t* of Student-Fisher, in order to determine if the differences between the average values met with in the single groups were statistically significant.

Comparing the findings of the normal subjects with those obtained from the oligophrenics and the schizophrenics, the value of the *t* was seen to be respectively 6.2 and 5.4. To those values correspond a *P* (casual probability) <0.001. The findings, shown in the table, are therefore statistically significative.

COMMENT

The further determinations of the total NA concentration carried out by us in the CSF confirm that in the oligophrenics and schizophrenics a quantitative diminution of these substances as regards normal subjects is present. As we have affirmed(3), such a variation is due essentially to the diminution of free NA, that is of the fraction not bound to the proteins.

The quantitative values obtained by us are proportionally about half of those reported by Bogoch(4). This difference is very probably due to the different method used: in his determinations the interference of the hexoses, which, as we have demonstrated(1), also react with the Bial's reagent, is not taken into account at all.

Although Bogoch's method is less pre-

cise than ours, his findings regarding schizophrenic subjects, agree with ours: he too has observed a considerable reduction of the NA total quantity in these patients in comparison with the control subjects.²

As to the interpretation of these variations, Bogoch, having noticed that the NA concentration in the CSF tends to augment in proportion to age, put forward the hypothesis that there is a ratio between the CSF NA total quantity and the maturation processes of the nervous system(4). According to him the NA have an important part in the functions of the ematoliquoral barrier. Cumings and coworkers(6) stated that the NA, inasmuch as they are components of the molecule of the ganglioside, a hydrosoluble glycolipide, are contained in the cerebral cortex and, in a minor quantity, in the white matter. They further report that the quantity of the NA in the grey matter does not vary perceptibly according to age, while in the white substance it gradually diminishes during the course of life.

Our actual knowledge of the NA metabolism and its function in the nervous system is still scarce, so that for the present we do not think it possible to discuss the assertions of Bogoch and put forth a hypothesis interpreting the findings we have here reported. The diminution of these substances in the CSF of oligophrenics and schizophrenics is in any case a basis for maintaining that in these patients there exists an altered metabolism of the glycolipides of the nervous system.

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² Bogoch affirms, moreover, that he has met with an NA diminution in subjects affected by various neurologic diseases(5); in our researches we have obtained low NA values in some patients affected with multiple sclerosis, paralytic dementia, serious hemispheric atrophy due to carotid thrombosis. We have carried out determinations too in 4 cases of presenile, 3 of senile and 4 of atherosclerotic dementia, obtaining low values in the first two groups, normal values in the third; in consideration of the limited number of cases examined, these findings must however have further confirmation.

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TRANLYCYPROMINE (PARNATE) A NEW MONOAMINE OXIDASE INHIBITOR

FREDERICK LEMERE, M.D.¹

In my experience, the most effective drugs available for the treatment of depression have been the monoamine oxidase inhibitors (Marsilid, Catron, Nardil, Niamid and Marplan). Even at best, however, their therapeutic efficiency leaves much to be desired. At the recommended safe dosage, they are often ineffective or so delayed in their results that patient and doctor become discouraged and electroshock may have to be resorted to. The search for an improved anti-depression drug therefore continues.

The drug used in this preliminary clinical screening trial was tranlycypromine (Parnate).² Tranlycypromine is a monoamine oxidase inhibitor that was dispensed in 10 mg. tablets. It was used either alone or in a tablet (Parstelin) combining it with 1 mg. trifluoperazine (Stelazine). In all, 39 private psychiatric patients were tried on this medication. Of these, 32 were predominantly cases of depression while the remaining 7 were mild schizophrenics with depression, apathy, exhaustion or withdrawal. The initial dosage was one 10 mg. tablet twice a day but this was raised to three a day or lowered to one a day depending on the reaction of the patient.

The evaluation of the results of drug therapy in psychiatric cases is always difficult, especially in depression which is usually a self-limiting illness anyway. I would like, therefore, to report only my prelimi-

nary clinical impression regarding this drug after using it in private practice for 6 months. Tranlycypromine compares very favorably with the other monoamine oxidase inhibitors as far as clinical improvement goes, with as good or better results. Many patients who had been on other monoamine oxidase inhibitors preferred tranlycypromine because it seemed to be more quickly effective, produced fewer side effects and usually needed to be taken only once or twice a day. The main advantage from the physician's standpoint is the relative rapidity of its benefits and the quick cut-off of its action (within 1 to 3 days) if side effects develop. Patients who improved did so within a few days to a week or two. Side effects were minimal and consisted of rare instances of insomnia, a feeling of overstimulation, a dizzy or fuzzy feeling in the head, dry mouth or sweating which subsided within a day or two after temporarily discontinuing or reducing the dosage of the drug. No cases of jaundice or serious hypertension were encountered in this group of patients.

CONCLUSIONS

Preliminary clinical experience indicates that tranlycypromine (Parnate) is an improved type of monoamine oxidase inhibitor that appears to be more rapid in its action, effective in smaller doses (1 to 3 tablets a day—usually one tablet b.i.d.) and relatively free of side effects. It is indicated for treatment of any type of depression and sometimes for withdrawn schizophrenic patients.

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² The tranlycypromine (Parnate) used in this investigation was kindly furnished by the Smith Kline & French Laboratories.

CASE REPORTS

TREATMENT IN TRANSVESTISM

VERONICA M. PENNINGTON, M.D.¹

Transvestism is deviant sexuality in cases of sociopathic personality disturbance, characterized by cross-dressing.

Since earliest times it has been recognized that changing brain chemistry produces altered behavior; the treatment of our transvestite was carried on with that thought in mind.

Our patient's present illness began at the age of 6 when he first remembers fantasies of his intense desire to be a girl. He would sit apart from other children enjoying this fantasy, put on his sister's panties and masturbate. At the age of 9, he took the clothing of a neighboring woman from the line, retired behind a hill, masturbated, and returned the clothing to the proper place. The intense feelings of wishing to be a woman continued in spite of alcoholic excesses from the age of 16 through his 4 years of Army service and later. A month after his marriage, at the age of 23, he put on his wife's panties and came out before her. He always took the succubus position, and in the evening after their two children, girls, were in bed, he would go into his wife's bedroom, put on her clothing, using rouge and lipstick, and admire himself in the mirror, producing sexual gratification by masturbation. These episodes of cross-dressing increased, and he began to have suicidal ideation because his marriage and work seemed headed for disaster. After 7 years of marriage this 31-year-old television technician was admitted to this hospital on January 5, 1960. He had two acute periods of anxiety, one just prior to coming to the hospital in which he cross-dressed, went into a trance-like condition, partial shock, with profuse cold perspiration, trembling, and a period of amnesia for about a half an hour. When he awakened he felt complete satisfaction. Three days after admis-

sion to this hospital, when he had a strong desire to cross-dress, he had another anxiety reaction without loss of consciousness.

He was begun on nialamide, 50 milligrams q.i.d., meprobamate, 400 milligrams t.i.d., and chlorpromazine, 50 milligrams q.i.d. At first he continued to request that the conversion operation be performed on him. Five times he has considered mutilating himself by removing his external genitalia with a knife so that he could "truly be a woman." Cells from the buccal cavity were examined and XY male chromosomes were easily distinguishable and identifiable.

He had noticed 'cycles consisting of a feeling or a desire to be a woman, together with cramp-like abdominal sensations and the feeling that he had ovaries. He considered these to be menstrual symptoms. He thought many times of suicide and had four guns with which to accomplish this, but he made no actual attempt to do so.

He gradually improved, first in his sleeping and in fewer anxiety reactions, and his transvestitic tendencies gradually disappeared. Psychological testing before and after treatment corroborated his return to normal.

He was discharged as normal on February 5, 1960 and has resumed his former work. He has returned twice for personal interview in addition to writing about his progress. He continues to take the medication prescribed when he came to the hospital. He and his wife are happier than they have been since their marriage. His desire to be a woman now "seems like a bad dream."

CONCLUSIONS

1. Female psychosexual functioning in a male brain produced by some biochemical malfunctioning in the center of bisexual development antagonistic to the gender represented by the gonads may be the cause of transvestism.
2. Transvestism is perverted behavior which has been corrected

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chemically by the phrenotropic agents m-alamide, chlorpromazine, and meprobamate in a patient whose case was presented, resulting in complete negation of transvestitic symptoms and a return to normal behavior.

HISTORICAL NOTES

VETERA ET NOVA

If I were required to guess offhand . . . what is the bottom cause of the amazing material and intellectual advancement of the last 50 years [*i.e.*, the 2nd half of the 19th century], I should guess that it was the modern-born and previously nonexistent disposition . . . to believe that a new idea can have value. With the long roll of the mighty names of history present in our minds, we are not privileged to doubt that for the last 20 or 30 centuries every conspicuous civilization . . . has produced intellects able to invent and create the things which make our day a wonder; perhaps we may be justified in inferring, then, that the reason they did not do it was the public reverence for old ideas and hostility to new ones always stood in their way . . . the prevailing tone of old books regarding new ideas is one of suspicion and uneasiness at times, and at other times contempt. By contrast, our day is indifferent to old ideas, and even considers that this age makes their value questionable, but jumps at a new idea with enthusiasm and high hope . . . I make no guess as to just when this disposition was born to us, but it certainly is ours, was not possessed by any century before us . . . and is doubtless the bottom reason why we are a race of lightning-shod Mercuries, and proud of it—instead of being, like our ancestors, a race of plodding crabs, and proud of that.

. . . Nothing is today as it was when I

was an urchin; but when I was an urchin, nothing was much different from what it had always been in this world. Take a single detail, for example—medicine. Galen could have come into my sick-room at any time during my first 7 years [*i.e.*, 1835-1842] . . . and he could have . . . stood my doctor's watch without asking a question. He would have smelt around among the wilderness of cups and bottles and phials on the table . . . and missed not a stench that used to glad him 2000 years before, nor discovered one that was of a later date. He would have examined me and run across only one disappointment—I was already salivated; I would have him there; for I was always salivated, calomel was so cheap. He would get out his lancet then; but I would have him again; our family doctor didn't allow blood to accumulate in the system. However he could freight me up with old familiar doses that had come down from Adam to his time and mine . . . and if our reverend doctor came and found him there, he would be dumb with awe . . . Whereas if Galen should appear among us today . . . he would be told he was a back number, and it would surprise him to see that that fact counted against him, instead of in his favor. He wouldn't know our medicines; he wouldn't know our practice; and the first time he tried to introduce his own, we would hang him.

—Mark Twain

PROCEEDINGS OF THE AMERICAN PSYCHIATRIC ASSOCIATION

THE ONE HUNDRED AND SIXTEENTH ANNUAL MEETING, ATLANTIC CITY, NEW JERSEY, 1960

The 116th Annual Meeting of the American Psychiatric Association was held in Atlantic City, New Jersey, May 9-13, 1960, with headquarters at the Traymore Hotel. Business meetings and scientific sessions were held in Convention Hall.

The total registration was 5,077, making this one of the largest Annual Meetings, although smaller than the 1959 Annual Meeting by 27 persons. The registration included 2,434 members, 1334 guests, 393 exhibitors, 874 wives of members and 42 press representatives. Foreign guests included psychiatrists from Africa, Australia, England, Haiti, Italy, Japan, Poland, Portugal, Switzerland, and Turkey. The Program included 152 scientific papers and 19 Round Tables.

The opening meeting was called to order by Dr. William Malamud, President, at 9:30 a.m., on May 9. The Reverend William F. Doyle of Atlantic City delivered the invocation. The Honorable Robert B. Meyner, Governor of New Jersey, gave a welcoming address to the members, followed by the introduction of Dr. R. H. Felix, President-Elect, by Dr. Malamud.

Dr. Mathew Ross, Medical Director, was called upon to give his report to the membership. He spoke of the image of the administrative staff offices, noting the major mission essentially is one that entails communications—the receiving, storing, retrieving, processing, production, facilitating, and disseminating of communications. Reports were presented by Dr. Alfred Auerback, Speaker of the Assembly; Dr. Robert S. Garber, Chairman of the Arrangements Committee; and Dr. John Donnelly, Chairman of the Program Committee. Dr. C. H. Hardin Branch, Secretary, reported that the official membership count on March 31, 1960 was 11,037. Upon recommendation by the Council, three new District Branches were approved by the membership: Mid-

Hudson (N. Y.), Nebraska-North Dakota-South Dakota, and Ontario. This brings to 52 the number of District Branches in the Assembly. The Treasurer, Dr. Addison M. Duval, then reported that the Association had just completed a reasonably successful year financially and that the over-all financial condition had improved.

The Chairman of the Hofheimer Prize Board, Dr. David Hamburg, announced that the Association's \$1,500 prize was presented this year to Albert J. Stunkard, M.D., Associate Professor of Psychiatry at the University of Pennsylvania, for his work on obesity. The 1960 recipient of the Isaac Ray Award was Judge David L. Bazelon of the U. S. Court of Appeals in Washington, D. C. Dr. Ross announced the Somerset (Pennsylvania) State Hospital as the winner of the 1959 Mental Hospital Service Achievement Award. Honorable mention was also accorded to the Philadelphia (Pennsylvania) State Hospital and the Eastern (Oklahoma) State Hospital.

Dr. Felix then introduced Dr. Malamud, who presented his Presidential Address entitled "Psychiatric Research; Setting and Motivation." Dr. Felix was respondent. Dr. Malamud's Presidential address delineated "milestones of progress" in the recent history of the Association and elaborated on the role it might play in the future of psychiatric research by bringing its influence to bear towards providing more adequate settings and fostering appropriate motivation. He noted in closing that the nature of motivation in clinical investigation finds its highest expression in Schweitzer's principle of "Reverence for Life," and that "the fostering of this principle and the establishment of a setting in which it can be most effectively implemented could be regarded as a fundamental objective of our Association." Immediately following this address, the session observed a moment of

silence in memory of those members of the Association who had died since the 1959 Annual Meeting. The opening exercises were closed with a benediction by Rabbi B. Rubin Weilerstein.

The second business session was called to order by Dr. Malamud on Tuesday, May 10, at 2:00 p.m. The first item of business was a report of the results of the election of officers for 1960-61. The successful candidates were announced by Dr. Evelyn Ivey, Chairman of the Board of Tellers, as follows: Dr. Walter B. Barton, President-Elect; Dr. D. Griffith McKerracher, Vice-President; Dr. Raymond W. Waggoner, Vice President; Dr. C. H. Hardin Branch, Secretary; Dr. Addison M. Duval, Treasurer; incoming Councillors, Dr. Daniel Blain, Dr. David A. Boyd, Jr., and Dr. M. Ralph Kaufman.

Reports were presented by the Coordinating Committee Chairman reviewing the activities of their respective groups of committees during the past year and plans for the future. Dr. Harvey J. Tomkins, Chairman, reported for the Coordinating Committee on Technical Aspects of Psychiatry; Dr. Wilfred Bloomberg reported as Chairman of the Coordinating Committee on Professional Standards; and Dr. Paul Lemkau reported as Chairman of the Coordinating Committee on Community Aspects of Psychiatry. Dr. Branch, Secretary, then announced approval of Proposal No. 1 to amend Article III, Section 3, of the Constitution, Proposal No. 2 to amend Article V of the By-Laws. Proposal No. 3 offered as a substitute for a portion of Proposal No. 2 was defeated.

Following the completion of the business meeting and a brief recess, Dr. Malamud at 3:00 p.m. presided over the annual Convocation for newly elected Fellows. A total of 162 new Fellows attended the ceremony. Highlight of the Convocation was the Fellowship Lecture presented by Leo W. Simmons, Ph.D., of Columbia University on "A Sociologist's Views on Patient Care and Treatment." The ceremony was concluded with a recessional march.

The next business session was opened at 9:15 a.m. on Wednesday morning, May 11, by Dr. Malamud. Dr. Branch presented the report of the Secretary to the membership,

reviewing the actions of the Council since the last Annual Meeting. On motion duly seconded from the floor, these matters were approved by the membership. By separate motions the proposed new District Branches, the Mid-Hudson (N. Y.), the Nebraska-North Dakota-South Dakota, and the Ontario District Branch were approved by the membership. The membership also approved Chicago as the site for the 1961 Annual Meeting. Dr. Malamud then read the names of Officers, Councillors, and Committee Chairman retiring from office at this Annual Meeting and announced that each would receive a Certificate in recognition of his service to the Association.

The Annual Dinner was held on Wednesday evening at 7:30 p.m. in the American Room of the Traymore Hotel and was followed by light entertainment and dancing. Highlight of the evening was the presentation of a handsome scroll to Dr. Mesrop A. Tarumianz for his leadership in establishing the Central Inspection Board in 1948, and for his service as its Chairman since that time. The presentation was made by Dr. Felix and was acknowledged by the audience with prolonged applause. Dr. Malamud introduced various APA officials and their wives, as well as foreign guests.

The Adolf Meyer Memorial Lecture, another highlight of the meeting, was presented at 10:00 a.m. Thursday, May 12. Sir Aubrey Lewis, M.D., F.R.C.P., of London, England, spoke on "The Study of Defect."

The final business session was held on Friday morning, May 13 at 11:30 a.m. At this time, the actions taken by the Council on May 12 were reported by the Secretary, Dr. Branch. The report was accepted by the membership upon motion from the floor. Dr. Malamud presented Certificates to those who were retiring from office and indicated his appreciation to the membership and staff for their assistance and cooperation during his tenure as President.

With the presentation of the gavel, Dr. R. H. Felix was formally installed as President of the Association for the coming year, and he announced the new Officers for the Assembly of District Branches: Dr. John R. Saunders, Speaker; Dr. Edward Billings, Speaker-Elect; Dr. Lester Shapiro,

Recorder; Dr. Alfred Auerback, Past Speaker; and Dr. Walter H. Obenauf, Parliamentarian. Area members of the Policy Committee are Dr. Robert S. Garber, Northeast, Dr. William L. Holt, New York, Dr. Hamilton Ford, South, Dr. G. Wilse Robin-

son, Jr., Midwest, and Dr. G. Creswell Burns, West.

After a few brief remarks by the new President, this final session was adjourned and the 116th Annual Meeting was officially closed at 5:00 p.m. on May 13, 1960.

SUMMARY OF MEETINGS OF COUNCIL AND EXECUTIVE COMMITTEE, MAY 1959 TO MAY 1960

This report presents, in summary form, the principal actions of the Council and the Executive committee at meetings held throughout the year. Many routine matters, such as referrals to Committees prior to definitive actions, are not included. Copies of the full minutes have been forwarded to the officers of each District Branch and Affiliate Society following the various meetings to keep their members informed of the matters considered and the actions that resulted.

Executive Committee Meetings, June 27 and September 17, 1959. Directed that the explanatory material regarding alternate proposed amendments to Article V, Section 2 of the By-Laws be included with the ballots. Approved a joint meeting between the Section on Psychotherapy and the Academy of Psychoanalysis in accordance with the rules and practices of the Association. Approved the Resolutions of the Exploratory Conference on Standards of Psychiatric Hospitals regarding present hospital standards and the principles underlying them. (The following three Resolutions were subsequently approved by the Council on November 13-14, 1959.) BE IT RESOLVED (1) That the present standards for public mental hospitals have been and continue to be indispensable for improving patient care; (2) That the Committee on Standards initiate a long-term basic study of hospital programs from the standpoint of existing practices and changing trends to determine whether there is need to modify present standards and the directions such modification should take; (3) That the Committee on Standards solicit sufficient funds from appropriate sources to carry out the above recommendations. Agreed that the furnishing of a patient's name, address

and diagnosis in governmental reports comes within the purview of ethical practice. Expressed interest in "Project Hope" and suggested that the project might be endorsed later when its program is developed more fully. Expressed approval of the plan for APA-endorsed magazine articles on psychiatry and directed the Medical Director to proceed with the necessary negotiations. Requested that psychiatrists continue to be listed with biological scientists in the publication *American Men of Science*. Authorized the Medical Director and Dr. Alfred Auerback to investigate the possibility of holding a meeting in Tokyo, Japan, following the 1963 Annual Meeting. Authorized the Medical Director to handle at his discretion the matter of APA participation in a Joint Eastern Management Symposium. Accepted the report of the Speaker of the Assembly who noted that he planned to devote considerable time to working with the communications problem. Decided that the selection of Divisional Meeting papers for publication should be made locally by a publication committee which would function entirely independent of the Divisional Meeting program committee. Suggested that the Assembly review the problem of publishing Divisional Meeting papers and submit recommendations to the Council. Directed that as of June 15, 1959 no further commitments of Manpower Project funds should be made, pending further study of the matter by the Ad Hoc Committee on the Manpower Project and the Medical Director. Authorized Dr. William Malamud to represent the Association on an advisory group to assist in the evaluation of American Medical Association scientific activities. Authorized the transfer of the 1962 Annual Meeting from Montreal to Toronto, Canada.

Authorized the employment of part-time secretarial help in the office of the Program Committee Chairman and increased the budget for the Committee to \$3,500 for the 1959-60 fiscal year. Directed the Program Committee to make the following changes for the 1960 Annual Meeting: Shift the Friday business meeting from 9:30 a.m. to later that forenoon, schedule as many significant papers as possible for the Friday morning session, and have the Friday business meeting listed in the printed program with capitalization to emphasize the importance of the session. Directed the Speaker of the Assembly and the Program Committee Chairman to contact the District Branches and solicit their comments and recommendations regarding all aspects of Annual Meeting Sections. Extended to Dr. Mathew Ross a vote of commendation for his work with the "Statement of Principles for Planning Facilities and Services for Psychiatric Care" and authorized him to continue negotiations with the American Hospital Association. Requested the Committee on Liaison with the AHA to contact the Committee on Standards and Policies of Hospitals and Clinics regarding the preparation of a report on psychiatric services in general hospitals. Complimented Mr. Austin Davies for his effective action in bringing attention to the proposed separate listing of psychotherapists in the New York City telephone directory and assisting in effecting a satisfactory conclusion. Agreed that a simple explanation by the Speaker of the Assembly should be published in the January 1961 issue of the *American Journal of Psychiatry* with the explanation by the Committee on Constitution and By-Laws regarding the alternate choices for the proposed amendment to Article V, Section 2 of the By-Laws (District Branch membership). Directed the House Committee to consult with the Medical Director regarding the responsibility of the Committee in the operation of the Central Office building. Authorized the Medical Director to seek funds to finance a conference on aging in accordance with his proposal. Directed the House Committee and the Medical Director to review the proposal to purchase additional properties adjacent to the Central Office and present a recom-

mendation to the Council. Accepted the results of mail ballot among the Council regarding the proposal to schedule Council and fall Committee Meetings several years in advance.

Council Meeting, November 13-14, 1959. Approved the minutes for the Council Meetings of April 25-26 and 30, 1959 as amended. Ratified the actions of the Executive Committee on June 27 and September 17, 1959. Welcomed Dr. C. H. Hardin Branch, Secretary, following an illness of several months and acknowledged its indebtedness and appreciation to Dr. Lawrence C. Kolb who, as Acting Secretary in Dr. Branch's absence, carried the burden of the office so generously and performed the duties with such exemplary efficiency and dispatch, and discharged him with thanks. Directed the Treasurer to withhold payment of excess expenses of Committees or other organizational units of the Association when such amounts exceed the official budget approved by the Council. Directed the Executive Assistant to inform all organizational units of the amount of the budget for the fiscal year. Directed the Central Inspection Board to proceed to fulfill its present contractual agreements but not to develop any new agreements for inspection, or reinspection, and ratings of additional hospitals. Authorized an ad hoc Committee to study the CIB and prepare recommendations for the Council regarding further program planning. Deferred action on the proposed 1960-61 budget for the CIB and directed the Board to submit an accurate revised budget with consideration of the above actions. Directed that the Joint Information Service be continued until it is demonstrated that some other agency can adequately replace its purposes. Directed the Budget Committee to consider revisions to the present budgeting system which will reflect more clearly the work assignments of the staff. Increased the membership of the Budget Committee to seven with the addition of the Treasurer as a voting member of the Committee by virtue of his office. Amended the proposed budget for 1960-61 by increasing the amount allotted to the Nominating Committee to \$2,000 and decreasing the amount allotted to the Commission on Principles and Position on Cur-

rent Issues in Psychiatry to \$6,000. Directed that the funds for the Committee on Certification of Mental Hospital Administrators be budgeted and audited on the same basis as other Association funds. Approved, as amended, the 1960-61 budget as recommended by the Committee on Budget with the exception of items of income and expenditure for the CIB. Directed that the Dr. Agnes McGavin Bequest be placed at the disposal of the Treasurer for action at his discretion, with the condition that these funds not be used for operating expenses of the Association and that the identity of the funds be maintained if at all possible. (This action was subsequently revoked when it was learned that a restrictive clause limited the expenditure of the bequest.) Received the report of the Medical Director which reviewed the highlights of recent developments in the Central Office and noted some personal observations and recommendations. Authorized an increase in the price of the Membership Directory from one to two dollars for members and from two to three dollars for non-members. Authorized an increase in the price of the *Summaries of Scientific Papers* from \$2.50 to \$3.00 and voted to continue the 25c charge for extra copies of the Annual Meeting Program. Agreed with the Commission on Long Term Policies suggestion that the present policy encouraging members to attend Council Meetings as individuals as well as official observers was sufficient. Approved in principle the recommendation of the Commission on Long Term Policies that a Conference on Post-Graduate Teaching in which state hospitals would be fully represented should be called at an early date. Discussed the 1961 World Congress of Psychiatry which will be held in Montreal. A special APA Committee consisting of Drs. Francis Braceland, Winfred Overholser and Lothar Kalinowsky will work with the Canadian Psychiatric Association and arrange post-congress tours of facilities in the United States. Considered favorably the suggestion of the Policy Committee that the membership approve the transfer of Washoe County, Nevada to the Intermountain District Branch. Approved Divisional Meetings in 1961 in Salt Lake City (Area V), Milwaukee (Area IV), and New York City

(Area II). Approved the recommendation of the Program Committee regarding Post-Graduate Teaching Sessions at the Annual Meeting with the proviso that there be only one such session at each meeting, that it be financed by Association funds with expenses limited to \$200, that there be no charge for tickets, and that tickets be available to members only, on request, on a first-come, first-served basis. Directed the Secretary to write to the various organizations that meet immediately before the Annual Meeting asking them to consider the possibility of rescheduling their respective meetings immediately after the Annual Meeting. Authorized the Program Committee to schedule the final business meeting at 11:30 Friday morning, with all scientific sessions scheduled to terminate prior to that time. Directed that any royalties received by the Association for the sale of scientific papers from the Honolulu Divisional Meeting should be placed in the special book fund for the Central Office Library. Approved the recommendations of the Committee on Committees regarding the House Committee as follows: That the Committee be limited to seven members, that the tenure of appointment for new members be seven years, that in making new appointments the President consider the availability of the immediate past-president of the Washington (D. C.) Psychiatric Society, and that a rotation schedule should become effective in 1960 with the oldest member in point of service on the Committee retiring first, the next oldest retiring in 1961, etc. Approved the recommendation of the Committee on Committees that a Committee on Juvenile Delinquency not be established and that the Committee on Child Psychiatry be given specific responsibility for working in the area of juvenile delinquency in cooperation with other interested Committees. (The name of the Committee on Child Psychiatry was later changed to Committee on Psychiatry of Childhood and Adolescence.) Directed the Central Office to send out available information on the problem of the aging as it relates to the White House Conference to the Directors of the respective state mental health programs with the suggestion that this material be brought personally to the attention of the Governor of

each state. Authorized employment of a Librarian for the Central Office to facilitate the development of a Library illustrating the history of American psychiatry, provided this can be accomplished within the provisions of the 1960-61 budget. Authorized the appointment of a Steering Committee to develop tentative plans for a conference on the responsibilities, functions and training of psychiatrists, and authorized the Steering Committee to seek outside funds to support such a conference. Approved in principle the recommendation of the Committee on Mental Deficiency for an exploratory conference on mental deficiency and referred the matter back to the Committee for recommendations regarding implementation. Directed the Medical Director to communicate with the Chairman of the Council on Mental Health of the American Medical Association advising him of the recommendation made by the Committee on Public Health that residency programs should include provisions for appropriate training in community mental health program administration and that examination for certification in psychiatry by the American Board should include this subject; and to request the Council on Mental Health to consider this if they deem it appropriate. Restated its previous policy regarding a personal appearance before the Council by a Committee Chairman within the Coordinating Committee system, indicating that if a Chairman is of the opinion that his Coordinating Committee Chairman will not present a recommendation adequately, the two are in disagreement regarding a recommendation, or for any other reason the Chairman feels the interests of his Committee will be best served by his appearance before the Council, he has a right to request to be heard. Such requests will be addressed to the President with the Coordinating Committee Chairman fully informed. Approved the recommendation of the Committee on Nomenclature and Statistics and continued its membership at nine until May 1961. Approved the recommendation of the Committee on Psychiatric Nursing and reaffirmed its statement of policy dated November 5-6, 1955: "The APA considers that the training and development of psychiatric aides as technical

specialists within the nursing services of mental hospitals is most auspicious for the advancement of treatment and care of the mentally ill, but considers that the formulation of legislation to govern the qualifications, training standards and practices of psychiatric aides should be deferred until this area within the general field of nursing has been more fully defined." Approved the recommendation of the ad hoc Committee on the Manpower Project to utilize funds remaining in the Manpower Project account to employ an agent to set a design for the Project and to meet necessary expenses for constructing these plans for future action. Directed that the program already arranged by the Section on Psychotherapy be adhered to for the 1960 Annual Meeting and instructed the Commission on Long Term Policies to study the whole Section structure and present recommendations at the next Council Meeting. Approved the request of the Committee on Academic Education for authority to seek outside funds to subsidize publication of its bibliography of the scientific literature on youth covering the years 1945-58. Approved the request of the Committee on Cooperation with Leisure Time Agencies to change its name to Committee on Leisure Time and Its Uses. Approved in principle the recommendation of the Committee on International Relations that the APA offer its assistance to the State Department in the matter of exchange visits of United States and U.S.S.R. psychiatrists. Accepted the report of the Commission on Principles and Position on Current Issues in Psychiatry which noted that the position of Legislative Aide had not been filled because a suitable candidate had not been located. Drs. Francis Braceland and Jack Ewalt will continue to represent the Association before Congressional Committees. Requested the President to appoint three members of the Association knowledgeable in real estate matters to consult with the House Committee and present a recommendation regarding the wisdom of the proposal to purchase three row houses adjacent to the Central Office. Authorized the House Committee to obtain a six-month option on these properties for a sum not to exceed \$1,000 which could be applied later to the purchase

price if the decision is made to buy these properties. Approved the recommendation of the House Committee and authorized the purchase of rugs and drapes to complete the decoration of the second floor of the Central Office at a sum not to exceed \$2,000. Authorized the establishment of a special account at the Central Office with \$3,000 from grant funds of the SK&F Foundation Fellowships. This action was taken at the request of the SK&F Foundation Fellowship Committee to facilitate the mailing of checks and certificates to award winners. Directed that Dr. Charles Roberts be retired from the Joint Committee with the Canadian Psychiatric Association and suggested that this liaison committee consist of two representatives from each association. Accepted greetings from the Mexican Psychiatric Association and the Mexican Psychoanalytic Association extended by Dr. S. Spafford Ackerly, Vice-President, who visited Mexico City representing the APA. Directed that when an Officer represents the Association at an outside meeting, his expenses shall be reimbursed either by the society extending the invitation or by the APA from the Council Contingency Fund.

Executive Committee Meetings, January 5, February 20 and March 26, 1960. Advised by the Parliamentarian that the establishment of Chapters as geographical subdivisions of District Branches would be in conformity with the APA Constitution and By-Laws, the Executive Committee directed that the policy of the Association shall be that there is no interdiction against the establishment of geographical sub-divisions, which may be called "Chapters," within District Branches at their discretion, with the proviso that these sub-divisions shall have no official status nor recognition by the Association. There will be only one official representative from each District Branch to the Assembly or other official functions where a District Branch is represented. Accepted the report of the Committee on Relations with Psychology and authorized its publication in the *American Journal of Psychiatry* at an early date. Approved the recommendation of the Committee on Relations with Psychology and increased the size of the Committee to seven members to coincide with its counterpart Committee

from the American Psychological Association for a period of three years effective at the 1960 Annual Meeting. Approved the recommendation of the Committee on Liaison with the American Academy of General Practice that the Committee be authorized to cooperate and consult with the Wyeth Laboratories in the production of film considered useful in orienting general practitioners to psychiatric subject matter providing (1) that the role of the APA ad hoc Committee be confined to that of providing consultation and that if any credit lines appear in the film they shall not indicate or imply more than that; (2) that the final version of the film shall have the full approval not only of the consultants of the Committee on Liaison with AAGP but also of the Association's Committee on Public Information and the Public Information Officer; (3) that the film shall not contain any advertising of a specific drug product; (4) that this action shall not be taken as implying approval of future requests for such collaborative effort with private firms but rather that each such request shall be considered on its own merits; (5) that this action shall not involve any expense to the Association. Directed the Treasurer to work out the problem of deficit financing remaining in the budget in collaboration with the Executive Assistant and the Medical Director. Authorized Dr. William Terhune to write to each member with an outstanding pledge, to the Building Fund requesting payment. Appointed Dr. Henry Laughlin to represent the APA on the Permanent Council of the Institute for the Advancement of Medical Communication for one year. Appointed Dr. Leonard Duhl to represent the Association at the International Conference on Mental Deficiency in England. Appointed Dr. D. Ewen Cameron to represent the Association at the meeting of the Latin-American Psychiatric Association in Havana. Was informed by the President that he had appointed Drs. Robert S. Garber, Robert Hewitt and Paul Lemkau to consult with members of the House Committee regarding the proposal to purchase three properties contiguous to the Central Office. Was informed that Dr. George S. Stevenson had received for the Association the Dr. Agnes McGavin Bequest totalling

\$22,023.38. Since the terms of the will stipulated that the bequest must be used for some aspect of child psychiatry, the matter was referred to the Committee on Psychiatry of Childhood and Adolescence. Reaffirmed its interest in the matter of exchange visits of U.S.S.R. and U. S. psychiatrists and referred the matter back to the Committee on International Relations for the formulation of specific recommendations to implement the proposal, including the problem of financing the exchange visits. Directed that when an individual is appointed to serve as an official representative of the APA, he should be requested to submit a written report of all matters that he considers of importance in connection with the meeting. This report is to be sent to the Medical Director for reproduction and distribution to the Council and appropriate APA Committees. Was informed of the Presidential appointment of Dr. Alfred Auerback to represent the Association at the Pan-American Medical Conference in Mexico City. Approved the report and recommendations presented by the Special ad hoc Committee to Program the Future of the Central Inspection Board. The essential recommendations were that the CIB be terminated on December 31, 1960, that a reconstituted consultation service be set up within the Mental Hospital Service limited to one consultant and one secretary with possible staff expansion later if necessary, and that the consultant's reports be reviewed by the Mental Hospital Service Board of Consultants. Instructed the Medical Director to implement the recommendations and emphasized that the consultative functions of the CIB will be taken over by the MHS. Directed the Secretary to notify the President of the Board of the National Association for Mental Health of the termination of the CIB and to request that NAMH consider favorably the possibility of providing continued financial support for the consultative functions of the CIB under the jurisdiction of the MHS. Suggested that the President send a letter to Dr. Mesrop A. Tarumian, Chairman of the Central Inspection Board, expressing the appreciation of the Association to him and the members of the CIB for their excellent work over the years. Authorized a supplemental

appropriation of \$300 to the 1959-60 budget of the Coordinating Committee on Technical Aspects of Psychiatry. Authorized a supplemental appropriation of \$800 to the 1959-60 budget of the Coordinating Committee on Professional Standards. Appointed a Special Committee comprised of the Medical Director, the Public Information Officer, the Executive Assistant and one member from both the 1960 and 1961 Arrangements Committees to study material compiled by the 1960 Arrangements Committee regarding pre-registration by mail for the Annual Meeting. The two immediate Past-Chairmen of the Arrangements Committee (1958 and 1959) were named as consultants to the Committee. Authorized the Committee on Grants and Awards to continue negotiations with the Geigy Pharmaceutical Company for the establishment of an APA travel fellowship and to conclude the negotiations at its discretion if the proposal is amended to agree with the APA regulations governing such matters and to permit American psychiatrists to visit Europe on the same basis that European psychiatrists would visit the U. S. Accepted the resignation of Dr. Dick McCool as Chairman of the Membership Committee because of illness but retained him on the Committee until his normal retirement. Approved the appointment of Dr. Mary Jackson as Chairman of the Membership Committee for the remainder of the 1959-60 Presidential Year. Reappointed Dr. Benjamin Simon to represent the Association to the American Occupational Therapy Association Medical Advisory Council. In accordance with the recommendation of the Committee on Committees did not approve a request for Standing Committee status from the ad hoc Committee on Education in Public Hospitals in Liaison with the American Psychoanalytic Association on the grounds that other Committees, singly or in unison, can handle the work undertaken by this ad hoc Committee. Also in accordance with the recommendation of the Committee on Committees did not approve a request from the Committee in Liaison with the American Academy of General Practice to increase its membership to nine. Dr. Zigmond Lebensohn, Chairman of the House Committee, reported that in accordance

with the directive of the Committee, he contacted the members of the Executive Committee by telephone and telegraph and received permission to use the entire \$1,000 authorized by the Council as an option on one of the row houses contiguous to the Central Office. In accordance with the recommendation of the House Committee, the Executive Committee authorized an amount not to exceed \$2,000 to be made available to the House Committee for the purpose of completing its original assignment by securing options on one or both of the two parcels of property 1807 and 1811 R Street, if and when they become available during this coming year. Suggested that the Speaker of the Assembly should review the matter of registration fees at Divisional Meetings for invited guests who are non-members of APA. Was informed by the Medical Director that the following dates were selected by mail vote of the Council for the fall Committee and Council Meetings for the period 1960-63: Committees: October 28-29, 1960, November 3-4, 1961, October 26-27, 1962, October 25-26, 1963; Council: December 2-3, 1960, November 24-25, 1961, November 23-24, 1962, November 22-23, 1963. Appointed two representatives to the White House Conference on Children and Youth, Mr. Robert L. Robinson of the Central Office as press representative and Dr. Alfred M. Freedman as alternative APA representative, in addition to the previous Presidential appointment of Dr. Reginald Lourie as APA representative. Selected Drs. Kenneth Appel and Bernard Alpers to represent the APA at the annual meeting of the American Academy of Political and Social Science. Was informed by the President-Elect of the appointment of a Steering Committee Co-Chaired by Dr. William Malamud and Dr. Walter Barton to develop tentative plans for a conference on the responsibilities, functions and training of psychiatrists as approved by the Council. Directed the Chairman of the Coordinating Committee on Community aspects of Psychiatry to contact the Committee on Nomenclature and Statistics regarding the problems of comparison between different systems of nomenclature and statistics which are no longer merely local or national, but fre-

quently international, in scope. Authorized the Speaker to insert in the Mail Pouch a statement summarizing what is going on in the Association as an effort to improve communications within the Association. Authorized the Association to join with the National Association for Mental Health and the World Federation for Mental Health in sponsoring, without cost to the APA, a program on mental health during the 8th World Congress on Rehabilitation which is scheduled in New York City in August 1960. Appointed Dr. Maurice Friend, Chairman of the Committee on Psychiatric Social Work, to represent the Association at the meeting of the Social Welfare Assembly, National Health Council on April 22, 1960. Appointed Dr. Lothar Kalinowsky, Chairman of the Committee on International Relations, to represent the Association at the meeting of the World Federation for Mental Health, United States Committee, on April 22, 1960. Authorized the Committee on Aging to proceed with the development of its exhibit on aging in accordance with its original proposal and recommended that space be provided for the exhibit at the 1960 Annual Meeting. Instructed the Medical Director to inform his correspondent that the Association approved in principle the proposed meeting of professors of psychiatry during the Annual Meeting, but suggested that a more satisfactory time for such a meeting would be the day following the fall Committee Meetings. Authorized publication of Round Table Proceedings with subsidization from pharmaceutical houses provided the acknowledgement of the drug firm does not exceed the statement published in Regional Research Report No. 12. ("The American Psychiatric Association gratefully acknowledges the assistance of the Schering Corporation in making publication.") Editorial supervision must be provided by the Round Table personnel, subject to the approval and release of the material by the Editorial Board of the Journal. Approved the revised budget of the Central Inspection Board which amounted to \$35,950 for the period April 1-December 31, 1960. Was informed that the National Association for Mental Health had authorized the continuance of their \$10,000 annual contribution to the CIB by

transferring the contribution to the proposed consultation service of the Mental Hospital Service on December 31, 1960. Agreed to underwrite the salaries for the Project Director and Secretary of the General Practitioner Education Project for a two-month termination notice period beyond June 30, 1960 in case the application for a renewal grant is not approved, and agreed to underwrite the Project expenses until the renewal check is received if the application is approved. In the latter instance, the grant period would be retroactive to July 1. Approved publication of a Biographical Directory every five years with no Membership Directory published in such years. A Membership Directory will be published in all other years. Rejected a proposal for APA participation in a television series. Approved the statement honoring Dr. Mesrop A. Tarumian for his work with the Central Inspection Board and directed Mr. Robert L. Robinson to have the statement reproduced in an appropriate fashion for presentation at the Annual Meeting. Appointed Dr. Henry Laughlin to represent the Association at the 1960 Royal Medico-Psychological Association Meeting.

Council Meeting, May 7-8 and 12, 1960. Approved the minutes for the Council Meeting of November 13-14, 1959. Ratified the actions of the Executive Committee on January 5, February 20 and March 26, 1960. Reiterated its previous action approving the procedure of borrowing funds from subsequent years' dues to pay for renovations to the Central Office building in lieu of establishing an expensive mortgage arrangement. Established an Internal Management Committee consisting of the President-Elect (Chairman), Treasurer, Chairman of the Budget Committee and the Medical Director, with the President acting as a consultant, to develop improved internal management of the Association including delineation of the authority and responsibility of Officers and staff members and to develop clearer objectives and improved financial methods including a written operations manual. Approved the request of the Membership Committee and granted a year's extension of its assignment to study all aspects of the membership requirements in the Association. Recommended acceptance by the

membership of the amended list of candidates for election to membership or change in status as submitted by the Membership Committee. Directed that the criteria for referral of patients to a psychiatrist are the same as for referral of patients to any medical specialist by a physician outside that specialty. Authorized the Medical Director to expend funds at his discretion for Library purchases from the special book fund. Authorized the solicitation of funds from available sources, including contributions from members, to finance the development of the Central Office Library. Appointed Dr. Kenneth Gray to replace Dr. Walter L. Treadway, resigned, on the Editorial Board of the Journal. Approved the recommendation of the Commission on Long Term Policies that the proposal for the establishment of a new membership classification not be accepted. Approved the recommendations of the Commission on Long Term Policies regarding Annual Meeting Sections as follows: (1) Abstracts of all papers, including those of the Sections, shall be submitted to the Program Committee by the established deadline. (2) The Program Committee shall rate the papers submitted by a Section for qualification on the program as is done with other papers. (3) If a Section fails to submit an adequate program by the established deadline, the Section forfeits the right to a Section meeting for that year. (4) If a Section fails for three successive years to provide an adequate program, the Program Committee will report this to the Council. (5) If a Section does not have adequate papers in number or quality, the Program Committee may place appropriate papers in that Section. Authorized the appointment of an ad hoc Committee to study the Convocation and report to the Council. Was informed that the Associated Clinical Psychiatrists' Prize has been officially discontinued by the donor. Directed that the formulation of awards and commendations be referred to the Committee on Grants and Awards for suggestions as to a uniform procedure and format. Approved the recommendation of the Committee on Constitution and By-Laws to disapprove a proposal to create two types of Honorary Fellows—scientific and philanthropic. Nominated Dr. Lawrence C. Kolb to the American

Board of Psychiatry and Neurology to replace Dr. William Malamud who retires from the Board in December 1960. Approved the revised budget for 1960-61 as recommended by the Treasurer and the Budget Committee with income projected at \$803,082 and expenses projected at \$775,606. Approved the employment of Dr. Bartholomew W. Hogan as a member of the Central Office staff. Directed that the remaining uncommitted funds of the Manpower Project should be used for the purpose of coding on electronic data processing cards, membership information available in the Central Office and that this operation should be considered a portion of the overall study of psychiatric manpower. Discharged the ad hoc Committee on Manpower with thanks. Referred to the Commission on Long Term Policies the suggestions presented by petition from members of the Section on Psychotherapy to revise Section business meeting procedures, i.e., registration, voting procedures and representation, and directed that an appropriate report and recommendations should be presented for consideration by the Council. Received an information report stating that it appeared unlikely that exchange visits could be developed in the near future between U.S.S.R. and U. S. psychiatrists. Received the report of a Central Office study of foreign-trained physicians in U. S. mental hospitals occasioned by the A.M.A. Council on Medical Education and Hospitals requirement that effective July 1, 1960 all such graduates must be certified or fully licensed to serve as interns or residents in U. S. hospitals. Hospitals not meeting this requirement will have their training programs disapproved. The study indicated that 10% of the physicians employed in institutions with psychiatric residency training programs are vulnerable. These include 143 residents and 568 staff physicians—80% in state hospitals, 11% in state schools, 6% in private hospitals, and 3% miscellaneous. Directed the Central Office, in collaboration with the Ohio District Branch, to obtain as much information as possible on methods being used in the various states and provinces to meet the problem of reimbursement for patient care in public institutions. Approved the recommendations of the House

Committee that : (1) The property numbered 1809 R Street be purchased for \$25,000, financed by the sale of securities ; (2) that properties 1807 and 1811 R Street be purchased as soon as they can be acquired satisfactorily in the judgment of the Committee utilizing funds already authorized for options to remove them from the market until financial arrangements for their purchase can be completed ; and (3) that all such purchases be effected in a straw name until all properties are acquired. This negotiation amounts to a transfer of investments from securities to real estate. Was informed that the proceedings of Annual Meeting Round Tables are the property of the APA and that their publication in any manner is subject to the release of the material by the Editorial Board. Indicated that the Association will not make a policy statement on the matter of planned parenthood and/or birth control. Elected Dr. Robert H. Felix as Moderator for the Council. Elected Drs. William Malamud and Aldwyn Stokes to serve on the Executive Committee. Approved the request to have a Divisional Meeting in Washington, D. C. in the fall of 1962. Approved three new District Branches : Mid-Hudson (N. Y.), Nebraska-North Dakota-South Dakota, and Ontario. Approved the recommendation of the ad hoc Committee to Review Expenses and Speaking Engagements of Vice-Presidents that if a Vice-President travels as an official representative of the President and the District Branch or other organization acting as host does not pay for actual and necessary expenses in conjunction with the trip, he shall be remunerated from the Contingency Fund of the Council. Authorized the Committee on Psychiatry of Childhood and Adolescence to sponsor jointly with the American Academy of Child Psychiatry a conference on the training of the child psychiatrist with funds for the conference to be secured from a source independent of the APA. Approved the recommendations of the Committee on Public Health to reconstitute the Contract Survey operation of the Central Office and authorized the President to appoint a Board to (a) determine whether a survey should be done, (b) determine the method of doing the survey, (c) review the report before its release and

(d) act in accordance with specific authority of the Council in supervising the work of the staff in this area of activity. Authorized the Medical Director and the Committee on Psychiatric Nursing to explore further the possibility of scheduling a multidisciplinary conference on means of improving total patient care, with particular emphasis on inservice education. Went on record as officially opposing any mandatory suspension of the medical license or right to practice when a physician becomes mentally ill or emotionally disturbed. Approved the recommendation of the Committee on National Defense that the APA is not in a position to comment on the selection or use of any particular type of military weapon. This recommendation resulted from a communication received from a member of the House of Representatives regarding the use of biological and chemical warfare. Authorized the Chairman of the SK&F Foundation Fellowship Committee to explore informally and to receive an additional grant if it is offered to continue the work of the Committee. Authorized the announcement of the winner of the George N. Raines Award at the Annual Meeting. Approved the recommendation of the Mental Hospital Service Board of Consultants that the consultation service which will succeed the Central Inspection Board under the MHS also undertake the inspection of hospitals/schools for the retarded according to the standards promulgated by the Committee on Standards and Policies of Hospitals and Clinics for the purpose of rating such institutions. Approved the recommendation of the MHS Board of Consultants that a Sub-Committee of five members of the Board who have had experience in inspection and rating hospitals and schools be appointed to rate the hospitals/schools for the retarded which are inspected, and that they be authorized to issue certificates to fully approved institutions using the rating system previously approved by Council for use by the CIB. Approved the recommendation of the MHS Board of Consultants that a separate Sub-Committee of the Board, consisting of three members, be appointed to review the reports and recommendations made by the MHS consultants following

surveys and consultations regarding other types of institutions. Heard the Incoming President announce the appointment of Dr. Howard P. Rome as Chairman of the Coordinating Committee on Professional Standards replacing Dr. Wilfred Bloomberg. Approved the appointment of Dr. Dick McCool as Chairman, and Dr. A. E. Davidson and Dr. Marvin L. Adland as new members of the Membership Committee. Approved a change of name to the ad hoc Committee on Recognition for Allied Service Personnel in Mental Hospitals (formerly the ad hoc Committee on an Organization for Mental Hospital Personnel). Continued the following ad hoc Committees: Insurance, Joint Committee with the Canadian Psychiatric Association, District Branch Committees, and Education in Public Hospitals in Liaison with the American Psychoanalytic Association. Instructed the Secretary to notify the Secretary-General of the Japanese Society of Psychiatry and Neurology that the Association is interested in visiting Japan and is exploring further the details regarding the proposed 1963 meeting in Tokyo. Approved the membership questionnaire as submitted by the Medical Director for the coding of membership information on IBM cards and authorized its implementation. Approved the plan presented by the Medical Director representing the ad hoc Committee on Pre-Registration to conduct a limited experiment in pre-registration for the 1961 Annual Meeting. Approved the recommendation of the Board of Tellers that future ballots require the voter to cast only one vote for the slate of Officers submitted by the Nominating Committee with the exception of Councilors who will continue to require individual votes to determine the successful candidates. Approved the recommendation of the Board of Tellers that when propositions are to be included on the ballot, its format will be prepared after consultation between the Chairman of the Board of Tellers and the Chairman of the Committee on Constitution and By-Laws. Noted the passing of Drs. George N. Raines, Gregory Zilboorg and Adolph Rehns, all of whom were serving as members of Committees or Boards at the time of their death.

REPORT OF COORDINATING CHAIRMAN, COORDINATING COMMITTEE ON THE TECHNICAL ASPECTS OF PSYCHIATRY

The year has been marked by intense committee activity operating in multiple significant areas. The committees have been sensitive to immediate needs as well as issues requiring long term planning and investigations. There has been a ready recognition of problems requiring joint action by individual committees together with the development of avenues of communication enabling the various committees, national and local, to become better acquainted with one another's ongoing activities.

More specifically, the Committee on Aging, under the chairmanship of Ewald Busse, M.D., has designed an exhibit on the psychiatric problems of the aged which is on view, for the first time, at this meeting. It is hoped that this exhibit will be used elsewhere and particularly at the 1961 White House Conference on Aging. The project has been the immediate responsibility of a member of the committee, Maurice Linden, M.D. The cost of this display has been defrayed through outside funds. The Eleventh Mental Hospital Institute had as its main theme, the problems of aging. The committee assisted in the planning of this Institute and members actively participated in the Institute itself. The Institute provided the occasion for much constructive thinking—there was a greater clarification of issues involved—and added opportunities for sound planning. The committee is presently engaged in further preparations for the White House Conference. At the committee's request, Council directed the Central Office to send out available information on the problem of the aging as it relates to the White House Conference to the directors of the respective state mental health programs with the suggestion that this material be brought personally to the attention of the Governor of the state.

The Committee on Psychiatry of Childhood and Adolescence, formerly called the Committee on Child Psychiatry, under the chairmanship of Franklin Robinson, M.D., has been primarily involved in the recently instituted certification of Child Psychiatry as a subspecialty under the American Board of Psychiatry and Neurology. The implications of this action are presented in detail in Dr. Robinson's paper "Current Status of Child Psychiatry" published in the February 1960 issue of the *American Journal of Psychiatry* and these have received the attention of this committee throughout the year. The committee has

accepted the primary responsibility of investigating the general area of juvenile delinquency with the expectancy of coordinating their efforts with other interested committees.

J. Sanbourne Bockoven, M.D., chairman of the Committee on History reports the following activities: 1. The period of April 1959–November 1959 was largely devoted to acquiring background data regarding the possibilities of sponsoring a research project on the History of Contemporary American Psychiatry. Time, travel and correspondence were invested by committee members in the interests of acquiring books of historical value for the library at APA headquarters. 2. Committee activities from November 1959 to April 1960 have been largely given over to carrying out a project to write up a history of the American Psychiatric Association under topical headings useful to the Commission on Long Term Policies. 3. Committee members have also written papers on historical topics and a number have been published or accepted for publication.

The Council approved the recommendation of the Committee on History of Psychiatry that a librarian be employed at the Central Office to facilitate the development of a library illustrating the history of American Psychiatry provided this can be undertaken within budgetary limitations.

The Committee on Medical Education, chaired by George C. Ham, M.D. has completed the Descriptive Directory of Psychiatric Training in the United States and Canada with the assistance of the Central Office and it is now in press. As a result of the recommendation from this committee and similar recommendations by the Commission on Long Term Policies and the Ad Hoc Committee on Education in Public Hospitals in liaison with the American Psychoanalytic Association, the president-elect, at the request of Council, has appointed a steering committee to develop tentative plans for a conference on the responsibilities, functions and training of psychiatrists and with authority to seek outside funds to support such a conference.

The principal activity of the Committee on Mental Deficiency, under the chairmanship of Howard V. Blair, M.D., was a planning of an exploratory conference on mental deficiency with other organizations with similar interests; this has been approved, in principle, by Council and referred back to the committee for proper implementation. The committee is now

engaged in developing suitable ways and means to hold such a conference.

James V. Lowry, M.D. chairman of the Committee on Public Health, indicates that information has been obtained on the mental health activities of those states in which APA surveys were done prior to July 1957 and finds that there have been impressive changes in these states. Committee members Mabel Ross, M.D. and Benjamin Pasamanick, M.D. actively participated in the Conference on Mental Health Training in Schools of Public Health. Another member, Joseph Downing, M.D., continued to maintain liaison with the American Public Health Association, with particular reference to the American Public Health Association Guide for Evaluating Community Mental Health Programs. The committee has initiated the gathering of information to assist in determining if an action program is necessary and/or practical on nursing home care for psychiatric patients.

The Committee on Rehabilitation has been active through group action and through the activities of individual members, particularly its chairman, Benjamin Simon, M.D. Dr. Simon has been reappointed for another three-year term as the APA representative on the Medical Advisory Council of the American Occupational Therapy Association, and the Council on Medical Education and Hospitals of the American Medical Association has requested his reappointment to several of their Advisory Committees. He has most recently participated in a Survey of the Curriculum in Occupational Therapy of the University of Florida. Action is being taken in regard to the rehabilitative aspects of the APA's Mental Health Surveys of Alabama and British Columbia. Donald Carmichael, M.D. of the committee has participated in the work of the Subcommittee on Mental Health Terminology of the Advisory Committee on Nomenclature and Classifications relevant to disability and rehabilitation and indicates definite progress being made in the development of a standardized nomenclature of disabilities including mental disorders. Active participation is reported by the committee with a number of other organizations in the rehabilitative field. The book *Rehabilitation of the Mentally Ill; Social and Economic Aspects*, edited by Greenblatt and Simon, was published in January of this year and contains several chapters written by members of the committee. Various other papers on rehabilitation have been written by members of the committee. A round table meeting, under the sponsorship of this committee, on "The Impact of the 'Open Door'

on Activity Programs in Psychiatric Services" is being held at this Annual Meeting. The work of the committee will be reported upon at the Eighth World Congress of the International Society for the Welfare of Cripples.

The report of the Committee on Research, Milton Greenblatt, M.D., chairman, is as follows: During the past year, several notable Regional Research Conferences were held. On June 5 and 6, 1959, Galesburg State Research Hospital and University of Illinois presented a conference on "Cerebral Dysfunction and Mental Disturbance." Dr. Harold E. Himwich was honored at this meeting on his 65th birthday.

The New Orleans conference of January 13 and 14, sponsored by Louisiana State University School of Medicine had as its theme, "Problems of Communication." In Seattle on February 26 and 27, the University of Washington sponsored a meeting on "Research in the Behavioral Sciences." The State University of Iowa selected the topic "Child Development and Child Psychiatry" in tribute to Dr. Arnold Gesell in his 80th year, for its conference on March 18 and 19, 1960.

Now in the planning stage for 1960 are conferences in St. Paul, Los Angeles and New Haven.

Several Psychiatric Research Reports have been published recently. Report No. 11, entitled "Recent Advances in Neurophysiological Research," is the proceedings of the conference conducted by McGill University in Montreal in November 1957; and Report No. 12 on "Explorations in the Physiology of Emotions" is a result of the University of Oklahoma's conference in April 1957.

Through the APA Central Office, application has been made for outside funds to finance the proposed conference-workshop on "State and Local Participation in Mental Health Research." This is the conference developed by the GAP Committee on Psychopathology in collaboration with APA's Committee on Research.

At the December 1959 annual meeting of the American Association for the Advancement of Science, the Committee on Research again cosponsored a symposium. "Animal Behavior" was the topic of the two-day conference, arranged by committee representative Dr. Eugene Bliss who, with the permission of AAAS, will have the proceedings of this symposium published, perhaps by Harper.

Dr. Peter Knapp of the committee is presently engaged in plans for a 1960 AAAS symposium with probably collaboration with the American Psychoanalytic Association. The

Committee on Research, represented by Dr. L. J. West, is sponsoring a round table on "Research on Dreams" at the 1960 APA Meeting.

For the 1960 Annual Meeting, Sir Aubrey Lewis of Maudsley Hospital, London, was selected to deliver the Adolf Meyer Memorial Lecture, speaking on "The Study of Defect."

The report of the Committee on Therapy, under the chairmanship of Henriette Klein, M.D., indicates that the committee has completed its two-year study of "The Status of Psychotherapy of Hospitalized Schizophrenic Patients." A preliminary report is ready to be submitted. This study was done through the cooperation of approximately 300 hospitals. The committee has completed the first draft of an "Outline of Therapies :—The Elements of Psychiatric Treatment : A Brief Guide for the Physician." This project has been endorsed by the Committee in Liaison with the American Academy of General Practice. The Committee on Therapy views with increasing alarm the "popularization" of hypnosis as a treatment procedure and particularly the teaching of this technique conducted outside of standard medical sources. The committee has gathered information concerning the use and abuse of hypnosis and has available the various resolutions on this subject passed by different District Branches. The committee is in the process of preparing a statement on "Recovery, Incorporated."

The work of the Ad Hoc Committee on Education in Public Hospitals in Liaison with the American Psychoanalytic Association, under the chairmanship of Bernard Bandler, M.D., has been the preparation of a brochure on "The Patterns of Types of Programs for Education in Public Hospitals" which is predicated on the collating and the organizing of data secured during the last several years from panels and workshops held throughout the country addressed to the needs of public hospitals in relationship to education and personnel. As indicated previously, a recommendation coming from this committee to Council on "graduate education," similar to recommendations coming from other committees, resulted in the appointment of a steering committee by the president-elect to plan for a comprehensive conference in this area.

During my first year as Coordinator, I have been impressed with the scope of committee work and the dedication of the individual members. As a result of my experience, I have a keener appreciation of the fact "—that the work of the various committees is the most important operation of the APA—." Finally, I extend to the chairmen and members my appreciation of their forbearance and cooperation.

Harvey J. Tomkins, M.D.
Chairman

COMMENTS

COLLEGE STUDENT INDISCIPLINE IN INDIA

In an article in *The Guardian* published by Garda College and Baria Science Institute (Navsari, India) Principal A. K. Trivedi and associates throw light on a pressing problem in education in India today. They indicated the major factors in student indiscipline and its principal causes, likewise remedial steps that should be taken.

These findings are based on the responses of 743 students of both sexes from the College and Institute, who volunteered for the test. They were given a questionnaire containing 45 items covering important aspects of student life and were required to write their opinions immediately in the presence of their teachers. In the hope that they would express themselves freely and honestly they were to turn in their papers unsigned. The authors are quite aware of the flaws in the questionnaire method but felt that by asking for spontaneous answers on the spot to questions they had not had time to deliberate or confer about they would get as close as possible to the real attitude of the students. To simplify the process, questions could be answered "yes" or "no" or by simply checking applicable items.

The results showed that the students had surprisingly poor respect for University, College and teachers, while 16% of those answering the questionnaire have no respect even for their parents. The conclusion is that in family and social outlooks "the students are hopelessly ill-prepared in the matter of general respectful attitude towards others." Some of the details of this test are striking: 47% of the parents do not provide the necessary books for their sons and daughters to study; nearly 45% of the students do not read standard texts; many depend on cram books to pass their examinations; "about 20% of parents take

no interest in results, behavior or general manners of their children in their college life"; 68% of the students take an active interest in politics; politicians and outside leaders are substantially responsible for creating an attitude of indiscipline.

The authors sum up that 69% of the students have no love and regard for the University.

It is notable that in the authors' discussion there is no mention of any program on the part of the University for bringing teachers and parents together in the interest of planned collaboration for the benefit of all concerned.

Principal Trivedi and his associates have concrete suggestions for improving the situation: all students should be in residence under University control, with one rector or sub-rector to every 12 students to give advice and be responsible for deportment; scholarship money should be controlled as far as necessary to insure that students be provided with the necessary text books. Small teaching centers are preferred to large ones and it is even suggested that an "overgrown University" might profitably be broken up into two or three smaller ones.

On the constructive side the plan as presented in this brief article in *The Guardian* leaves much to be desired. Its main strength lies in a clear statement of the outstanding difficulties of student life as exemplified in the two institutions mentioned, and pointing to some conspicuous reasons for these difficulties.

In the matter of indiscipline among the youth of this generation in India it is worth remembering, as the authors point out: "Young men do today what their elders did under another Government when they were taught to be disobedient."

CAPITAL PUNISHMENT AS DETERRENT

A few years ago a man was hanged in Alexandria, Virginia. One who witnessed the execution, on that very day, murdered a peddler in the Smithsonian grounds at Washington. He was tried and executed, and one who witnessed his hanging went home, and on the same day murdered his wife.

—ROBERT G. INGERSOLL

CORRESPONDENCE

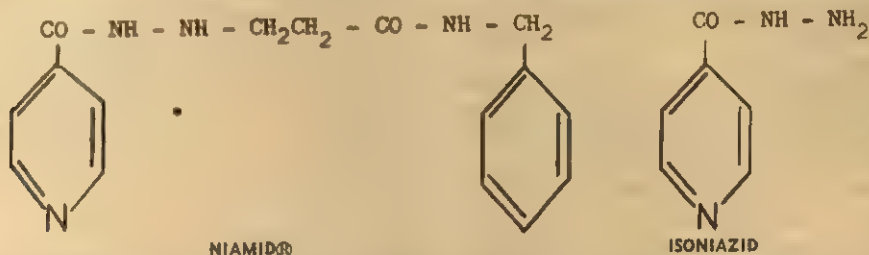
ACTIVITY OF NIAMID® AGAINST MYCOBACTERIUM TUBERCULOSIS AND CROSS RESISTANCE TO ISONIAZID

Editor, THE AMERICAN JOURNAL OF PSYCHI-
ATRY :

SIR : A new drug, Niamid®, N-isonico-
tinoyl-N'-(B-N-benzylcarboxamido-ethyl)-
hydrazine, recently put on the market for
the treatment of mental depression is closely
related chemically to Isoniazid. The chem-
ical structures of Niamid® and Isoniazid are
as follows :

Isoniazid with resultant loss of the effective-
ness of this drug for subsequent therapy of
the tuberculosis. Further ramifications of
this situation in terms of cross infection of
other psychiatric patients with Isoniazid
resistant tubercle bacilli need not be ex-
plored here.

To investigate this possibility, 3 cultures
of acid-fast bacilli sensitive to 0.1 mcg. of



Because of this similarity, it was thought
that Niamid® might possess anti-tuber-
culous activity. If such were the case, its
administration to psychiatric patients who
also had tuberculosis might result in the
development of resistance of the bacteria to

Isoniazid and 3 cultures resistant to 5.0
mcg. of Isoniazid per milliliter (ml.) of
medium were used to test for sensitivity and
cross resistance to Niamid®. The cultures
were recent isolations for patients hos-
pitalized for tuberculosis.

TABLE 1
SENSITIVITY STUDIES TO ISONIAZID AND NIAMID®

Culture Source	Control	ISONIAZID			NIAMID®					
		Mcg./ml.			Mcg./ml.					
		0.1	1.0	5.0	0.01	0.1	1.0	5.0	20	100
E	4+	S	S	S	CR	CR	S	S	S	S
G	4+	S	S	S	CR	CR	S	S	S	S
P	4+	S	S	S	CR	CR	S	S	S	S
K	4+	CR	CR	CR	CR	CR	CR	CR	CR	CR
R	4+	CR	CR	CR	CR	CR	CR	CR	CR	CR
S	4+	CR	CR	CR	CR	CR	CR	CR	CR	CR

Key :

4+ = confluent growth over entire media surface.

S = no growth.

CR = same as 4+.

A sample of pure Niamid® was obtained.¹ The drug was incorporated into Lowenstein-Jensen medium in the following concentrations: 0.01, 0.1, 1.0, 5.0, 20 and 100 mcg. per ml. of medium. Isoniazid sensitivity tests were done simultaneously at concentrations of 0.1, 1.0 and 5.0 mcg. per ml. of the same medium.

The bacteria were emulsified in physiological saline, and approximately one billion organisms were inoculated on each media slant. Control tubes of Lowenstein-Jensen medium without drug were also used. The cultures were read at 28 days.

The results, as given in Table 1, demonstrate the occurrence of cross resistance in that when the tubercle bacilli were completely resistant (CR) to 5.0 mcg. per ml. of Isoniazid they were also completely re-

sistant to the same concentration of Niamid®, and to concentrations as high as 100 mcg. The table of results also shows that Niamid® is slightly less effective than Isoniazid since it does not inhibit multiplication at as low a level as does Isoniazid.

SUMMARY

This study shows that there is cross resistance of tubercle bacilli to Niamid® and Isoniazid. When Niamid is administered to a patient, thorough studies should be carried out to determine if the patient also has active tuberculosis. If so, a second anti-tuberculous drug should also be used, in accordance with currently established principles of combined drug therapy for tuberculosis.

George A. Klugh,
Philip C. Pratt,
Robert J. Atwell,
Ohio Tuberculosis Hosp.,
Columbus, Ohio.

¹ Kindly supplied by Dr. Carl Keller, Pfizer Laboratories, Medical Department, 630 Flushing Avenue, Brooklyn 6, N. Y.

RE NARDIL

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY:

SIR: In the February 1960 issue of your *Journal*, Dr. U. C. Kothari of Danville State Hospital, Danville, Pennsylvania, has written a paper entitled "Toxic and Other Side Effects of Nardil, Phenelzine Sulphate W1544A." This investigational report contains a number of inconsistencies which we feel merit editorial consideration.

1. *The Cephalin Flocculation Test*—The cephalin flocculation tests, as well as the many other "flocculation" tests, reflect alterations in plasma protein composition. To quote Schiff (*Diseases of the Liver*; Lippincott 1956): "None of these tests is strictly a liver function test, and none is an entirely specific indication of liver dysfunction. the tests must be used intelligently with due regard to the whole clinical picture and not interpreted blindly as though they were specific liver tests."

It is because of this that clinicians employ a so-called battery of tests to evaluate liver function and do not rely solely on a non-specific flocculation test. This would be es-

pecially true in the study of any patient where the laboratory reported an abnormal value for a single flocculation test. In none of the cases reported by Dr. Kothari was any additional laboratory test indicative of liver function reported, such as serum alkaline phosphatase, serum bilirubin, and serum glutamic oxaloacetic transaminase.

Also of interest is the erratic fluctuation in the cephalin flocculation results in certain of the cases reported. One patient had a flocculation test reported as 2+ on one occasion during therapy. The drug was discontinued and then readministered. Despite reexposure to Nardil, all subsequent flocculation tests in this patient were normal. To interpret this single 2+ CCF report as "liver damage" in view of these findings and in the absence of any other clinical or laboratory evidence hardly seems justified. In two other patients the CCF tests are reported as returning to normal despite continuation of the drug. In another patient an "hepatotoxic effect" is ascribed to Nardil solely on the basis of a single 1+ CCF report.

It would have been helpful if the author

had cited additional references. For example, in *The American Journal of Psychiatry*, 116: 71, 1959, Saunders, *et al.*, reports 61 patients treated with phenelzine. They state, "... our patients were subjected to a battery of clinical studies, including thymol turbidity, cephalin flocculation, alkaline phosphatase, A/G and BUN, without significant abnormalities."

2. *Drug Rash*—The author states that "one patient developed a marked drug rash

soon after the first dose of Nardil." The drug was discontinued; but three days later was resumed in standard dosage. Despite reexposure, the rash disappeared and did not recur. In view of this, it would be difficult to classify the observed dermatitis as a "drug rash."

Thomas C. Fleming, M.D.,
Medical Director,
Warner-Chilcott Laboratories,
Morris Plains, N. J.

NARDIL

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY:

SIR: I have read with great interest the paper by Dr. Ujamlal C. Kothari in the Clinical Notes Section of the February *Journal*. In this paper, Nardil (phenylethyl hydrazine dihydrogen sulfate) was reported to exhibit toxic effects on the liver in 7 out of 13 cases as judged by the development of an abnormal cephalin flocculation test. We have just concluded an investigation on the efficacy of Nardil in angina pectoris, and in the course of this study, a battery of liver function tests was performed prior to instituting therapy and while receiving Nardil. The dosage employed was 15 mg. three times a day, identical to that employed in Dr. Kothari's study.

We have found Nardil to be virtually free of hepatotoxicity in the patients studied. Specifically, in 36 patients, no changes in the cephalin flocculation test or in serum bilirubin were noted. Slight elevation of the

serum glutamic-oxaloacetic transaminase occurred in 2 patients, and elevation of the alkaline phosphatase occurred in a single patient. No evidence of clinical hepatotoxicity or drug eruption was encountered.

It should be borne in mind that the cephalin flocculation test, although widely used as a test of hepatic function, is not a specific test of hepatic dysfunction, but merely reflects subtle alterations in plasma proteins not necessarily due to liver disease. Secondly, one is not always justified in considering "one-plus" reactions as necessarily abnormal, because of laboratory variations in technique, stability of reagents, *etc.*

The purpose of this communication is to report that we have found Nardil to be relatively free of hepatotoxicity, and therefore one should not discard a valuable antidepressant drug on the basis of meager laboratory observations.

Elmer Pader, M.D.,
New York, N. Y.

REPLY TO THE FOREGOING

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY:

SIR: Thank you very much for giving me the opportunity to respond to the letters of Doctor Fleming and Doctor Pader.

In reply to Doctor Fleming, I must say that I could not find "... a number of inconsistencies ..." in my paper entitled "Toxic and Other Side Effects of Nardil" as claimed by Doctor Fleming, but I reported

the facts as I observed them in good faith. Keeping the welfare of the patients in mind, I could not ignore my findings and felt obliged to make them public.

I am unable to accept that all our CCF (cholesterol cephalin flocculation) reports were due to "erratic fluctuation" suggested by Doctor Fleming because: 1. In none of these patients, was the CCF found plus prior to putting them on medication, 2. In

6 of our patients CCF never became plus, 3. In some of them CCF reports were proportional to the dosages of Nardil.

In case of drug rash, Doctor Fleming is in error in stating that the drug "was resumed in standard dosage." My statement was: "(The) patient was placed on smaller doses which were gradually increased to 15 mg. t.i.d. without further reaction." I believe this observation does not indicate that this was not a case of "drug rash" but rather indicates a case of "drug rash" where the phenomena of desensitization or development of tolerance to the drug occurred by the gradual increase of the medication.

In reply to Doctor Pader, I must say that I agree with him that "... one is not *always* justified in considering 'one-plus' reaction as *necessarily* abnormal," but many of our patients had more than "one-plus." I also agree with him that "one should not discard a valuable anti-depressant drug on the basis of meager laboratory observations." Let it be known that I am impressed by the anti-depressant effects of Nardil and I am still using it.

I am not an authority, but personally I cannot discard the widely used liver func-

tion test CCF as it indicates disturbances in the plasma-proteins (*Normal Values in Clinical Medicine*; by Sunderman and Boerner) for which "the liver is the major site of formation." (*Biochemistry of Disease*; by Bodansky and Bodansky). To my mind the plasma proteins are vitally important to health, therefore, any drug causing such changes should be used with caution.

In conclusion, I request Doctor Fleming and Doctor Pader to re-read my paper noting that I did not claim Nardil to be definitely hepatotoxic or that it should be discarded. What I did say was:

"None of them (our patients) developed any clinical sign or symptom of liver disorder." ... "Risk of hepatotoxic effects of this drug is worth keeping in mind." ... "Phenelzine sulphate may produce drug rash as many other drugs do." ... "All the above effects are mild and reversible and may be treated by reducing or discontinuing the medication and with adjuvant therapy."

Ujamlal C. Kothari, M.D.,
Pontiac State Hospital.

PSYCHIATRISTS IN FEDERAL PRISON SERVICE

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY:

SIR: An article by Dr. Warren S. Wille on "Psychiatric Facilities in Prisons ..." which appeared in the December 1957 issue of *The Journal* came to our attention shortly after we printed our 1958 bulletin on personnel employed in State and Federal institutions.

The National Prisoner Statistics series which was initiated by the Bureau of the Census in 1926 was transferred to the Bureau of Prisons in 1950. The Census Bureau began in 1926 to publish statistics on personnel employed in State and Federal prisons and reformatories. This continued through 1946, the year the Census Bureau terminated publication of annual reports on prisoners. In 1950 we published personnel statistics which covered all States but Georgia. We continued to collect the data

but due to lack of staff and also some feeling that the reports were not adequate we hesitated to publish again until 1958. The 1958 figures are based on an entirely revised form which had been in operation for three years.

The study by Dr. Wille indicates that his project covered the year 1954 and that the only previous survey was done by Dr. Winfred Overholser in 1926! Though Dr. Wille's figures are somewhat more comprehensive than those we publish, nevertheless data of psychiatric personnel employed in State and Federal institutions have been available for many years.

James A. McCafferty,
Criminologist,
U. S. Dept. of Justice,
Bureau of Prisons,
Washington 25, D.C.

REPLY TO FOREGOING

Editor, *THE AMERICAN JOURNAL OF PSYCHIATRY* :

SIR: In comparing the statistics on the number of psychiatrists employed in State and Federal prisons in 1954 (the basis for the previous article in this *Journal*) and the number employed in 1958 as listed in National Prisoner Statistics, No. 22, January 1960, Federal Bureau of Prisons, Washington, D. C., a total of 43 full time psychiatrists were employed in 1954. Of these, 31 were working in the State prison system and

12 for the Federal system. The 1958 figures reveal a total of 43 psychiatrists employed full time, 32 in the State institutions for adult offenders, and 11 for the Federal institutions, revealing that the acute shortage of psychiatrists in corrections work still persists.

Warren S. Wille, M.D.,
Consulting Psychiatrist,
Psychiatric Clinic,
State Prison of Southern Michigan

INDUCTION VS. DEDUCTION

The conflict between Galileo and the Inquisition is not merely the conflict between free thought and bigotry or between science and religion; it is a conflict between the spirit of induction and the spirit of deduction. Those who believe in deduction as the method of arriving at knowledge are compelled to find their premises somewhere, usually in a sacred book. Deduction from inspired books is the method of arriving at truth employed by jurists, Christians, Mohammedans, and Communists. Since deduction as a means of obtaining knowledge collapses when doubt is thrown upon its premises, those who believe in deduction must necessarily be bitter against men who question the authority of sacred books.

—BERTRAND RUSSELL

INTROSPECTION

Perpetual self-inspection leads to spiritual hypochondriasis.

—OLIVER WENDELL HOLMES

NEWS AND NOTES

AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY, INC.—Two examinations have been set up for 1961. The first will be held in New Orleans, Louisiana, on March 20 and 21, 1961, and another examination has been set up for October 9 and 10, 1961, in Chicago, Illinois.

CANADIAN MENTAL HEALTH ASSOCIATION ANNUAL MEETING.—More than 200 delegates registered for the annual meeting of the C.M.H.A. at Banff, Alta., June 2-4, 1960. The leading speakers included Dr. J. S. Tyhurst of Vancouver, Dr. Frank Coburn of Saskatoon, Dr. Keith Yonge of Edmonton, Dr. Paul Lemkau of Baltimore, Rev. Dr. Noel Mailloux of Montreal and Dr. James Gilbert of Aberdeen, S. Dakota.

Dr. Tyhurst declared that "a patient's progress depends a great deal on the way a staff appears to expect him to behave. Where the emphasis is on safe custody and control patients appeared to have behaved with 'repressed disturbed behaviour'; wherever they are treated in a way that lets them see the staff expect them to get better, they do, in fact, begin to get better . . ."

Dr. Coburn's forthright statement: "The day of the old-fashioned deterioration-breeding medical concentration camp called an asylum is just about over. The day of short-term treatment in small units with restitution to the community is here . . . The new concept is that a great many mental patients can be treated in the community with safety and dignity. It is the job of the CMHA to see that these revolutionary concepts are known, accepted and implemented the length and breadth of this fair land."

Dr. Paul Lemkau, Professor of Public Health Administration at Johns Hopkins University, referring specifically to problems in the rehabilitation of mental patients, stated that the heart of the solution lies in preventing debilitation through improper treatment procedures still prevalent in the traditional and understaffed hospital. It is his opinion that removing a patient from his community, isolating him from his fel-

lows, can hardly avoid development of an unhealthy attitude.

Rev. Noel Mailloux, distinguished psychologist and director of the Human Relations Research Centre in Montreal, is the recipient of CMHA's first national research award for his studies in juvenile delinquency.

Dr. Keith Yonge, head of Alberta University's psychiatry department gave a splendidly detailed review of the current status of mental health research.

The C.M.H.A., formerly the Canadian National Committee for Mental Hygiene, has an enviable record since its birth in 1918 in the promotion of mental health in Canada. It is the first of fifty-odd national organizations that were established following the original National Committee which was set up by Clifford Beers in New York City in 1909. Dr. J. D. Griffin is Director of the Canadian Mental Health Association.

AMERICAN ELECTROENCEPHALOGRAPHIC SOCIETY.—The newly elected officers of the American Electroencephalographic Society, elected at the June 1960 meeting in Cape Cod, Mass., are as follows: President, Dr. Jerome K. Merlis, Baltimore, Md.; President-Elect, Dr. Charles E. Henry, Hartford, Conn.; Secretary, Dr. George A. Ulett, St. Louis, Mo.; Treasurer, Dr. Isadore S. Zfass, Richmond, Va.

LOS ANGELES CO. DEPT. OF MENTAL HEALTH.—In order to coordinate and further develop its community mental health program under California's Short-Doyle Act, the County of Los Angeles has established a Department of Mental Health. Harry R. Brickman, M.D., F.A.P.A., formerly in charge of the outpatient department of the U.C.L.A. Neuropsychiatric Institute, is director of the new Department.

The Short-Doyle Act (1957), was designed to encourage the development of local mental health services through a 50% state reimbursement formula. Services allowable under the Act are voluntary psy-

chiatric outpatient, inpatient, and rehabilitation programs, psychiatric consultation, and mental health education.

All five of these services are represented in the Los Angeles program, which began with a total budget of slightly over \$1 million. Clinical services are concentrated almost entirely in tax-supported county general and chronic disease hospitals, while mental health consultation and education programs are planned for the County Health and Schools Departments. Preventive services and careful program evaluation are to be emphasized in the Department's future growth.

Two unique programs are being developed: 1. A psychiatric treatment program for delinquent children and their families to be conducted jointly with the County Probation Department on a voluntary child-guidance basis, with agreement by juvenile court authorities to suspend court wardship in favor of treatment efforts; 2. A county-wide psychiatric consultation service, in which the talents of the large pool of privately-practicing psychiatrists in Los Angeles are being made available in consultation with a wide variety of community health, education, welfare, and correctional agencies.

Since organized opposition to mental health programming has had a telling effect in Los Angeles, it is worthwhile to note that active participation by local psychiatrists in the deliberations of the Los Angeles County Medical Association was a strong positive factor in the Association's support of the new Department. The Southern California District Branch acted as an effective rallying point for this community action on the psychiatrists' part.

CONFERENCE ON "METABOLIC ERRORS, GENETICS AND MENTAL DISEASE."—The Second Invitation Conference presented by Napa and Sonoma State Hospitals in cooperation with the Ames Company, Inc. will be held at Napa State Hospital, Napa, Calif. on Saturday, October 8, 1960. The meeting will be limited to 120 professional persons including psychiatrists, psychologists, biochemists, geneticists, pediatricians and other interested persons.

The participants include: David Yi-Yung Hsia, M.D., Assoc. Prof. Pediatrics, Northwestern University Medical School; Norman Kretchmer, M.D., Prof. Pediatrics, Stanford University Medical School; Stanley W. Wright, M.D., Assoc. Prof. Pediatrics, U.C.L.A. Medical School; Willard R. Centerwall, M.D., Asst. Prof. Pediatrics, College of Medical Evangelists; Alfred G. Knudsen, M.D., Ph.D., Chairman, Dept. Pediatrics, City of Hope; Jon Karlsjon, M.D., Chief of Research, Sonoma State Hospital; Carolyn F. Piel, M.D., Asst. Prof. Pediatrics, University of California Medical School, and Robert W. Day, M.D., M.P.H., Research Specialist, Sonoma State Hospital.

For further information write: Dr. David Wardell, Chief of Professional Education, Sonoma State Hospital, Eldridge, Calif.

THE ALLAN MEMORIAL INSTITUTE OF PSYCHIATRY, MCGILL UNIVERSITY.—Dr. D. Ewen Cameron attended the second meeting of the Collegium Internationale Neuro-Psychopharmacologium, in Zurich, July 4-7. He presented a paper: "Further Studies Upon the Effects of the Administration of Ribonucleic Acid in Aged Patients Suffering from Memory (Retention) Failure," (Co-authors: Leslie Solyom, M.D., and Lee Beach, M.A.).

Dr. Cameron also represented the Canadian Psychiatric Association at the annual meeting of the Royal Medico-Psychological Association held in London, England, July 11-15, and discussed with the members the Third World Congress to be held in Montreal June 4-10, 1961.

DR. EDITH BUYER.—The death of Dr. Buyer occurred on June 5, 1960 at Suffern, N. Y. at the age of 66.

A member of the APA since 1947, Dr. Buyer had been medical supervisor to the Board of Education in New Rochelle, N. Y. for many years. She graduated from Johns Hopkins school of Medicine in 1918, and did graduate work in Vienna, Lausanne and Paris. For several years she was assistant in psychiatry at Columbia University.

During World War II she was a Navy

Medical Officer at the WAVES Training School in the Bronx, New York City. She had also served the New York State De-

partment of Health as a supervisor of children's hygiene centers. She was a member of the American School Health Association.

IMITATIVE ANIMAL

For imitation is natural to man from his infancy. Man differs from other animals particularly in this, that he is imitative, and acquires his rudiments of knowledge in this way ; besides, the delight in it is universal.

—ARISTOTLE

CONVERSATION

There is a sort of knowledge beyond the power of learning to bestow, and this is to be had in conversation ; so necessary is this to understanding the character of men that none are more ignorant of them than those learned pedants whose lives have been entirely consumed in colleges and among books.

—FIELDING

TALK

It is good to rub and polish our brain against that of others.

—MONTAIGNE

BOOK REVIEWS

INSULIN TREATMENT IN PSYCHIATRY. Edited by Max Rinkel and Harold E. Himwich. (New York: Philosophical Library, 1959, pp. 380. \$5.00.)

Anyone who is anybody is fashionable. Nowhere is this better seen than in medicine. The human weakness of the physician is far greater than his strength as an independent scientist. Too often he falls in with the enthusiasm of the group; too easily he discards what is of value because of the changing fashion.

As with other fashions, some daring initiator is first rejected, then endured, then embraced, and then rejected. And the intelligence of the physician appears to play a minor role in this acceptance or rejection. So it has been with the insulin shock therapies. I recall an early statement made by one who became a foremost investigator in the field of shock therapy. When the first reports as to their use arrived in America, he exclaimed, "I wouldn't give shock treatments to a dog or even to a rat."

What is the true value of insulin shock for the psychoses? Since Sakel first introduced his procedure in 1927, many thousands of reports on the subject have appeared. After the initial period of rejection, there was wide acceptance; now that the fashion of the tranquilizers has captured the medical imagination, there is doubt again. That the shock therapies were of inestimable value in focusing man's mind on the physiologic aspect of the psychoses is clear. The question now is just how valuable is the procedure itself. Many state hospitals which formerly used it no longer do so. Are they discarding what is of intrinsic value?

In this volume 19 authorities have presented formal papers and a score more have added their comments. Two of the papers provide an excellent historical background. There are 4 stimulating articles on physiochemical research.

Thirteen articles are devoted to clinical research. There are detailed presentations of techniques and thoughtful discussions of the results. Practically all of the contributors agree that insulin shock has definite value; their disagreement concerns the comparative value of insulin versus that of the tranquilizers. Hans Hoff insists that the insulin shock therapy is the only true biologic therapy for paranoid schizophrenia and that the tranquilizers "can only improve symptoms." Although he agrees that through the effect of tranquilizers on

symptoms, the patient's relationships can be improved and a beneficial cycle thus created, he insists that these drugs are for symptom therapy only. Dussik claims an extraordinarily high percentage of results with insulin and explains the failures of others in terms of lack of individualization in the therapy and failure to use the specifically prescribed procedure recommended by Sakel.

On the other hand, many of the authors find that the tranquilizers have adequately supplanted insulin for most of their schizophrenic patients. More patients improve with tranquilizers, they find, than with insulin. Yet even most of these authors agree that there are a number of patients who will respond only to insulin.

One major fact stands out in the presentations. Insulin shock therapy is but *one* of the tools in the total therapy. By itself, it often fails to bring about the desired results. Not only do many of the authors combine insulin with electric shock, but practically every therapist insists on the simultaneous use of psychotherapeutic procedures. The Vienna clinic, for example, uses group psychotherapy, occupational therapy, group dancing and gymnastics; and since domestic exigencies can aggravate the situation, relatives are included in special group psychotherapy. Even Dussik, the staunchest advocate of Sakel's procedure, evidences keen understanding of his patients' psychologic needs and apparently goes to great lengths to care for them.

Yet psychotherapy alone—even the undirected, attenuated form involved in manifesting a personal interest in a patient fails, and as Sargant reports, before the advent of insulin shock therapy psychotherapy given for months was ineffective.

The over-all impression gained from this book is that insulin shock therapy remains a most effective therapeutic procedure, that its effectiveness is greater if the specific Sakel technique is used, and that psychotherapeutic procedures enhance the results. One gains the impression even from those who use insulin, that the tranquilizers are a mighty addition to the psychiatric armamentarium and can be substituted in many cases which formerly were well treated by insulin. These authors agree that where the tranquilizers fail, deep insulin comas should be attempted.

Dr. Rinkel and Dr. Himwich are to be con-

gratulated. To the gargantuan task of enlisting so many outstanding scientists from so many countries they have added a meticulous and perceptive editorship. It would perhaps be carping to mention the absence of a subject index in a book so beautifully printed, with such superior format, and so well organized. Every psychiatrist will find in this volume material not only of specific value in the management of his patients but substance which will aid in his own understanding of psychiatrists, psychiatric procedures, and the pitfalls in the progress of man.

S. H. KRAINES, M.D.,
Chicago, Ill.

UEBER DAS SENIUM DER SCHIZOPHRENEN. ZUGLEICH EIN BEITRAG ZUM PROBLEM DER SCHIZOPHRENEN ENDZUSTÄNDE. By *Christian Müller*. (Basel/New York: S. Karger, 1959. IV, pp. 84. sFr. 13.50.) (Bibliotheca Psychiatria et Neurologia Fasc. 106.)

This monograph is based on 101 schizophrenic patients (40 males, 61 females) aged between 65 and 92 years. The material was investigated in the psychiatric department of the University of Lausanne, Switzerland (Chairman: Professor H. Steck). The average age of the patients was 72.3 years, the average duration of the disease 35 years, the average stay in the hospital 25 years. The author found it impossible to divide his material into the usual subgroups; he was astonished about the predominance of paranoid symptoms (main topics: sex, food, nihilism). He differentiates cases with the picture of normal aging from others with more or less clear cut senile-arteriosclerotic manifestations. There is a goodly number of patients who develop into a benign, quiet old age, but also such cases that turn into a particular senile paranoid picture. Among the patients who make their peace with old age as well as among those who deteriorate in the senile arteriosclerotic way, there are quite a few who are no longer recognizable as schizophrenics.

The author points out that his material—all patients hospitalized for many years—is a selected one and that the investigation of old schizophrenics living at large might change the total picture to some degree. He stresses the importance of evaluating clinical (institutional) material without losing sight of the psychotherapeutic and pharmacological treatment of the schizophrenics. He makes the suggestion to do some research in schizophrenics treated with chlorpromazine or reserpine from the viewpoint of "artificial aging" (Künstliche Vergreisung).

This monograph is the result of most meticulous and critical research. It is full of interesting observations and suggestions which in this review can scarcely be alluded to. The author states at the end of the treatise that while carrying on this investigation he found notions like "process" or "defect" in respect to schizophrenics more and more questionable. There is no doubt that every schizophrenic's affliction is a decisive factor in his unique destiny.

EUGEN KAHN, M.D.,
Houston, Tex.

MEHRDIMENSIONALE DIAGNOSTIK UND THERAPIE. By *Ernst Kretschmer*. (Stuttgart: Georgthieme, 1958, pp. 308. \$8.60.)

This volume was published to honor Professor Ernst Kretschmer on his 70th birthday. Kretschmer's influence on psychiatric thinking and practice is well illustrated by the contributions. The title, "Pluridimensional Diagnosis and Therapy," emphasized a contribution to psychiatry which is little recognized in this country. This concept formulates that in any psychiatric disorder, one must try to determine the constitutional factors, the psychologic mechanisms and the neurogenic factors. It was an attempt to find the causative components of an illness and to understand the individual differences instead of attempting to fit all illnesses into Kraepelin's classification. Kretschmer followed in time, but not in thinking, A. Meyer's reaction types. His next step was to apply this pluridimensional concept to psychotherapy.

A broad application of this diagnostic concept by Ruemke is followed by an excellent historical review by Tellez. The current far reaching influence of Kretschmer's concept of constitution on Spanish psychiatry is presented by several Spanish authors. German contributions discuss the significance of constitutional studies in epilepsy, traumatic psychoses, biology and genetics.

The contributions in the broad field of psychopathology might well be considered the most valuable part of the book. These are reformulations of Kretschmer's "sensitive delusional reactions" (1921) by Klaesi, Pauleikhoff and Haefner, and by other authors of the concept of schizophrenic psychopathology. Janz offers an especially stimulating review of the concept of split personality and of the changing psychopathology during the past forty years.

Kretschmer's concept of pluridimensional diagnosis and treatment is further illustrated

by contributions from the clinical field, e.g., in depression, psychogenic and neurotic disorders, social maladjustments.

The psychotherapeutic discussions are viewed essentially from a phenomenologic and existentialistic point of view. However, one should mention two psychotherapeutic methods which illustrate Kretschmer's influence; one, catharsis and the other, the means of hypnoid visualization.

This book offers the reader an understanding of an influential aspect of current German psychiatry, especially in psychopathology and clinical psychiatry.

OSKAR DIETHELM, M.D.,
The New York Hospital,
New York, N. Y.

PSYCHIATRY IN MEDICAL PRACTICE. By W. Lindsay Neustatter, M.D. (London: Staples Press, 1958, pp. 311. \$8.00.)

The author states in the preface that this book will primarily concern those in general practice. Much useful information is contained in the volume, but it would appear that from time to time the author forgets his primary goal.

The format and indexing of the book are such as to assume a degree of psychiatric sophistication in the reader. The contents deal largely with psychiatric entities and touch all too briefly on the application of psychiatric concepts and principles in general medical practice.

No attempt has been made to discuss marriage problems as such. The common problems of middle life, retirement and old age are given little attention; psychophysiologic disorders are generally ignored. The management of psychiatric problems of medical illness and convalescence is not covered. Community resources such as social agencies and others are mentioned but little.

Psychoanalysis and other specialized treatment techniques are described. While these are no doubt of some interest to the family doctor, they can hardly be considered as methods adapted in any way to the general practitioner's use. Treatment procedures such as insulin coma therapy are covered in considerable detail. Cerebral surgery is dealt with more than is necessary in a book of this type. It would seem that a greater effort should have been made to outline methods of treatment applicable to general practice.

Quite naturally, terms in more common use in England than in America have been utilized (e.g., pharmacologic terms such as phenobar-

bitone, largactil and soneryl). The chapter on medico-legal problems will certainly be of value to the physician practicing in England but is of little use to the American physician.

On the positive side it can be stated that there is much valuable information in this book. The chapter on sexual disorders and anomalies is interesting and the disorders of childhood are covered in a rather down-to-earth and practical way.

ROBERT A. MATTHEWS, M.D., AND
HARRY R. DRAPER, M.D.,
Philadelphia, Pa.

PSYCHOTHERAPY BY RECIPROCAL INHIBITION.
By Joseph Wolpe, M.D. (Stanford: University Press, 1958, pp. 239.)

This important book offers what may prove to be the first effective challenge to the pre-eminence of permissive psychotherapies in America today. It describes with great clarity and detail a set of directive psychotherapeutic methods, supported by a critical and detailed analysis of their results. This indicates about a 90% improvement rate which is sustained over a 2 to 7 year follow-up period. Though the possibility of a favorable bias in the analysis cannot be entirely eliminated, with all allowances for this the results are impressive, and should finally dispel the widely held superstition that directive methods aimed at symptom relief cannot produce durable improvement.

The author attributes the effectiveness of his methods to reciprocal inhibition of anxiety by eliciting responses incompatible with it. About half the book is an attempt to support this hypothesis through an exposition of pertinent aspects of conditioned reflex theory, supported by results of animal experimentation. Although both the theory and its applications have shortcomings, they are presented in a lucid and stimulating way.

The reader who approaches this book without prejudice cannot fail to be impressed with the power and ingenuity of the author's thinking, and the earnestness of his efforts to get at the real facts of the psychotherapeutic process. By offering an acceptable theoretical framework for directive forms of therapy and convincing data on their effectiveness, the book may help to free American psychiatrists to experiment more widely with techniques which have considerable therapeutic promise. As such, it deserves the careful attention of all students and practitioners of psychotherapy.

JEROME D. FRANK, M.D.,
Stanford, Calif.

ETIOLOGY OF SCHIZOPHRENIA. By G. U. Malis. (Moscow : Government Publications of Medical Literature (Medgiz), Moscow, 1959, pp. 224. 8.40 rubles.)

In the past generation we have seen so many dragons slain by the St. Georges bearing the emblem of Aesculapius that we are led to believe that all our medical ills will yield to the sharpened spears of the scientist. We have seen consumption proven to result from the bacillus of Koch, malaria to be caused not by the miasma of the swamp but by the organism of Laveran, what was formerly a species of mania (dementia paralytica) to result from the spirochete of Schaudinn. Since the birth of microbiology, there have been repeated attempts to marshal evidence that schizophrenia is due to a toxin, infection, or metabolic dysfunction. Among such endeavors have been Papez with his intracellular vibrios, more recently Heath and Co. with their taraxenin. Yet schizophrenia remains the Erlkönig of the psychiatric world, for it has never been accepted, in spite of these myriad efforts, that there is a specific toxin or a specific histology responsible for the mental symptoms.

Had we not suffered so many frustrations in the past in following the will o' the wisp of schizophrenic etiology, this logical exposition of Professor Malis would convince us that at the basis of schizophrenia are toxic substances probably arising from a virus infection. The 7 chapters of this interesting book describe the characteristics of schizophrenic blood; the effect of this blood on the growth of tadpoles; the effect on the isolated heart of the frog; the toxic substances obtained from schizophrenic blood; the phytotoxic properties; the origin of these properties and their infectious nature; the virus factor in the pathogenesis of schizophrenia. The bibliography contains about 200 Russian references and upwards of 150 non-Russian. The experiments, most of which have been carried out by Malis in the past decade or so, are reported factually along with their controls, and although there is wide variation between the effects from different groups of schizophrenics, the difference between controls and patients is often very impressive. The language is in a clear Russian style.

If one finds himself transported by enthusiasm with these Russian experiments, he should, as an antidote, read the critical evaluation of biochemical research in schizophrenia by Kety in *Science*, June 5 & 12, 1959.

W. HORSLEY GANTT,
Baltimore, Md.

PICTORIAL HISTORY OF PHILOSOPHY. By Dagobert D. Runes. (New York : Philosophical Library, 1959, pp. 406. \$15.00.)

The indefatigable Dr. Runes has done it again. His huge *Treasury of Philosophy* (1280 pp.), published in 1955, presents a wide sweep of the great, the near great and perhaps some others, who have talked about philosophy and other matters that may be something like it.

The present volume in much larger format (11 x 8½ x 1¼ in.) has a still wider sweep because it is given over mainly to pictures which are accompanied by brief biographical sketches and summaries, not by extended excerpts from the writings of the philosophers as in the other book.

Here will be found pictures gathered painstakingly from many sources—960 of them—photographs, reproductions of famous paintings, engravings, sculptures, views of places, portraits of individuals and groups, a veritable picture gallery not such as likely to be found elsewhere assembled in one place. The coverage ranges from Ur of the Chaldees to the contemporary Western world.

The author's introductory words are rather discouraging as to the uses of philosophy in the modern scientific era. "The history of scientific and technical discoveries fails to provide a single clue proving the influence of philosophical methodology . . ." and then, a side glance at certain eminent physicists whose names have been almost household words, who "have dabbled a bit in metaphysical cogitations, but more as a matter of frills than fundamentals."

We are reminded that for many centuries philosophy and theology were inextricably mixed, and neither as such has contributed to the advancement of science. Philosophy has been called in to support all kinds of doctrine theological, social and political, "by reformers as well as reactionaries, by usurpers as well as traditionalists, by kings and conquerors, to make vile and devious acts appear to be God-ordained or a plan of public welfare."

All these things are exemplified in the pronouncements of the spokesmen pictured in this book. One can select that with which one agrees. To seek to digest the whole one needs the power to resolve pre-Creation *tohu-vohu*.

The index lists some 825 names, more or less. The systematic presentation begins with Judaism (44 pp.) including a special section on Spinoza. Then follows Indian philosophy (16 pp.), the philosophy of China (8 pp.), Greece, including Greek thought in Roman lands (44 pp.). Then comes Christianity, pro-

loguing the Dark Ages (35 pp.), the Humanists (17 pp.), the Reformation (5 pp.), the world of Islam (7 pp.), thinkers of France (43 pp.). Here we are even treated to pictures of Sartre and his follower de Beauvoir, then Shaw (2 pp.), the new Italy (7 pp.), the smaller countries (3 pp.), British thinkers (44 pp.), Germany (68 pp.). This section exceeding all the others in length ends anticlimactically with Heidigger, who "for years idolized Hitler as the great protagonist of a new European culture." Finally Russia (14 pp.), America (43 pp.).

A rich feast is here for the Gargantuan appetite. Individual sections may include not only philosophers in the more technical sense, but also poets, dramatists, scientists, mystics, educators, pulpit orators, historians, psychologists. Brief sketches run from a few lines to half a page; longer ones, e.g., Spinoza, Plato, Darwin, Goethe, Franklin, Voltaire, Dewey, may occupy 2 or 3 pages each.

A vast amount of information is crowded into this volume, and emphasis is by intention placed upon the pictorial features. (There is, for example, a full page detail from the School of Athens.)

It is not to detract from the interest and value of Dr. Rune's gigantic *opus* to say that on reaching the final page one is more perplexed than ever in attempting to find an answer to the question in the author's initial Word to the Reader: "What is this metaphysical world, inhabited by so complicated and divergent a population, all about?"

C.B.F.

THE INEFFECTIVE SOLDIER—LESSONS FOR MANAGEMENT AND THE NATION. VOL. 1 THE LOST DIVISIONS. VOL. 2 BREAKDOWN AND RECOVERY. VOL. 3 PATTERNS OF PERFORMANCE. By: Senior Author *Eli Ginzberg* and Collaborators: *James K. Anderson, Sol. W. Ginsberg, John L. Herma, John B. Miner.* (New York: Columbia Univ. Press, 1959, pp. 225, 284, 340. \$6.00 per vol.)

These volumes represent the reports of The Conservation of Human Resources Project, established by General Eisenhower in 1950. The Project was a co-operative research undertaking, involving Columbia University, the business community, foundations, trade unions and the Federal Government. Since 1955 the Project has been under the administrative supervision of Dr. John A. Krout, Vice President of the University.

This statement is more properly cast in the form of an announcement rather than a review

in the traditional sense. The over-all enquiry had to do with an assessment of military experience in regard to man-power problems in the U. S. Army during World War II, and some of the implications (partly substantiated by post-war follow up) for national civilian human economy.

Volume 1 provides background data gathered from Army and Veterans Administration records, on men who were rejected for service or had to be prematurely separated from service by reason of psychological unsuitability.

Volume 2 presents an analysis of 79 case histories of soldiers who "failed."

Volume 3 provides an over-all view of the Project and endeavours to carry the analysis towards a deeper understanding of performance in war and peace.

There can be no question as to the worthwhileness of the medical-social science contribution thus reviewed, to war-time problems of military organization and training. Those who participated in, and gave leadership to, the understanding and solution of these problems had a challenging and exciting experience, much of which was definitely pioneer in nature. There can be no question, also, as to the importance of the search for the relevant correlates of that experience in civilian social life.

Since, however, we are never dealing with personal breakdowns and inadequacies *in vacuo*, but human beings engaged in a manifold of social demands and opportunities, we can never lose sight of the fact that military organization in time of war—and more specifically in time of World War II—is very different in our culture from pre- and post-war civilian organization. The Project recognizes this, in large part. Yet "Lessons for Management and the Nation," as a significant sub-title of the Reports, *in toto*, may suggest at least some elements of a somewhat naive and unacceptable social philosophy. The reader is challenged to review the military evidence in the light of such necessary considerations.

W. LINE, PH.D.,
University of Toronto.

THINKING. By *Sir Frederick Bartlett.* (New York: Basic Books, 1958. pp. 200. \$4.00.)

The approach to the subject of thinking in this book is from the viewpoint of the experimental psychologist. From some amazingly simple, but yet ingenious experiments, fascinating, but not altogether unexpected, results appear concerning several modes of thinking

and the differences between people when faced with an intellectual problem. These experiments were conducted at the Psychological Laboratory of the University of Cambridge, England, where Sir Frederick Bartlett was Director and Professor of Experimental Psychology until his retirement in 1952.

This experiment is an example. Individuals were presented with the following number arrangement :

1 2 3 4 : 2 1 3 4 : 2 1 4 3 : . . .

The subject was "asked to continue to change the position of the numbers in successive steps until he reached an arrangement at which it seemed 'natural' or 'sensible' to stop." . . . most people confronted with this example simply went on changing the positions of numbers in a haphazard manner until they were tired, or until a halt was called. But an appreciable number did extrapolate by rule, . . . confining changes of position to first and last pairs only and producing :

1 2 3 4 : 2 1 3 4 : 2 1 4 3 : 1 2 4 3 : 1 2 3 4

The *a priori* complete series was :

1 2 3 4 : 2 1 3 4 : 2 1 4 3 : 2 4 1 3 : 4 2 1 3 :
4 2 3 1 : 4 3 2 1

Not many reached it.

Quantifiers such as "most" or "an appreciable number" are characteristic of this work. From this experiment the reader might gather, although it is not the author's point, that most people don't think.

The author makes it clear : "Thinking is, in my use of the word, not simply the description, either by perception or by recall, of something which is there, it is the use of information about something present, to get somewhere else." There is comment that this kind of thinking demands intelligence, but intelligence is not a subject of study in this book. No attempt is made to measure either the quantity or quality of "thinking" or intelligence. It is the apparent purpose of the book to describe what thinking consists of.

There are descriptive and experimental essays on Interpolations (filling in gaps), Extrapolation (thinking beyond what is presented to a conclusion), sifting out evidence, thinking in experimental science, in everyday life, and in artistic productions. These essays cover only that part of the ground that the author has personally studied. There is no discussion of neurophysiology, no study of delusional thinking or other thinking disorders, nothing much about individual differences except to point out that such differences appear, the mathematical formulation of thinking is not included, and there is nothing about the unconscious.

The book is a short one, 200 pages, and a personal one. Among other things about thinking, one gets a good idea what Sir Bartlett's thoughts are ; and that is very likely the way he intended it to be.

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PSYCHOLOGICAL STRESS. By Irving L. Janis.
(New York : John Wiley & Sons, 1958,
pp. 439. \$6.95.)

In *Psychological Stress*, Irving L. Janis offers a comprehensive and important study of the psychological reactions of surgical patients. The author brings to this work a unique blending of detailed and sophisticated knowledge of the literature of psychological stress with a competent handling of 3 different research techniques. In the first part of this book he presents a detailed and extended fragment of a psychoanalytic case study of a single patient during the period when she was undergoing surgery. The depth and richness of understanding of this patient's experience are then amplified and in the next part through intensive interviews of a small number of surgical patients and a questionnaire survey of a large number of surgical patients. The net result is a sensitive and illuminating account of the psychological reactions to impeding surgery and during the postoperative period, as well as the interrelationships between these two.

The first part is offered both as a model for the research use of psychoanalytic techniques and for its findings with regard to stress. In keeping with the first aim, there is a careful and considered discussion of the problems and areas of applicability of psychoanalytic procedures. Most of the important issues are dealt with, and if the result is not final or complete, it is at least a notable step forward. Perhaps most lacking is any adequate way of preventing the investigator's research interests from influencing the reports of the Subject. They almost certainly did in this instance. With regard to content, the psychoanalytic study arrives at the general hypothesis that, "in adult life, exposure to any signs of potential mutilation or annihilation will tend to reactivate the seemingly outgrown patterns of emotional response which had originally been elicited and reinforced during the stress periods of early childhood." This is, of course, classical psychoanalytic doctrine and could have been stated in advance of the inquiry. However, the evidence certainly very strongly supports this hypothesis which is further elaborated in 14 subsidiary hypotheses.

The second part of the book, dealing with pre- and post-operative interviews and daily behavioral records of a small number of surgical patients plus the larger questionnaire survey, throws light on some of the hypotheses developed in the first part and in addition produces further hypotheses dealing with the specific relationships between the level of anticipatory fear and subsequent adjustment. The techniques are skillfully handled and the interpretations sensitively drawn throughout. The net result is a convincing picture of the psychological life of a surgical patient.

It is precisely because this book offers such an outstanding contribution to this area that the reviewer regrets the selection of a title for the work which implies far more than is offered. This book is not a general treatise on psychological stress. It is true that in reading it one learns a great deal about stress; the author's wide knowledge shows clearly throughout and he is careful to point out areas of relationship to other types of stress situations and possible generalizations growing out of these. At the same time he is equally careful to warn against overgeneralization, and himself professes this work to be no more and no less than it is, a fine study of the psychological reactions of surgical patients.

The reader who approaches this book with this in mind will be richly rewarded. All those concerned professionally with psychological studies will find the book fascinating reading. The researcher will be stimulated by its obvious scholarship, its illuminating insights, and its careful generalizations; the practitioner will gain increasing understanding of a hitherto much neglected area of human experience. But this book deserves a wider audience. It, or preferably a condensed summary might well be made required reading for physicians, nurses, hospital administrators, and all others professionally concerned with the care and treatment of surgical patients.

WILLIAM H. ITTELSON,
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Brooklyn, N. Y.

ENVIRONMENTAL INFLUENCES ON PRENATAL DEVELOPMENT. Edited by *Beatrice Mintz*. (Chicago: University of Chicago Press, 1958, pp. 87. \$3.00.)

This is one of the reports of the Developmental Biology Conference Series which took place under the auspices of the National Academy of Sciences. The complete record is now available in 10 volumes. The present volume is reviewed here primarily in order to draw the

attention of students of human behavior to a new and reliable source of information relating to the effects of prenatally experienced influences upon the development of the organism. Virtually all the material discussed in this formal record of an informal series of conferences is based on and refers to lower animals, but it is just such materials that can give us insights into what probably happens *in utero* to the human conceptus. If it is true that severe emotional disturbances in some pregnant women during the first trimester can give rise to sufficiently changed enzymatic states to produce cleft palate in the offspring, may it not be that such disturbances leave a permanent imprint also upon the nervous system? These are questions to which we need verifiable answers. Meanwhile, the present volume will serve to afford the markers in the direction of which one should look. There is an introduction by Paul Weiss, and the 8 chapters deal with the following matters in clear and concise English: 1. "Experimental alteration of morphogenesis: medical and biological significance"; 2. Specificity of teratogenic agents, of responding tissues, and of time of interaction; 3. Extragenic factors causing variations in development; 4. Interaction between the early embryo and its environment; 5. Multiplicity of effects of teratogenic agents; 6. Nutritional requirements for morphogenesis: action of metabolic inhibitors; 7. Interaction of areas of growth; 8. Developmental relationships and interactions in time and space.

ASHLEY MONTAGU, Ph.D.,
Princeton, N. J.

LIVE AND LET LIVE. By *Eustace Chesser*. (New York: Philosophical Library, Inc., 1958, pp. 126. \$4.75.)

The author of *Live and Let Live* is a psychologist with a flair for sociology. He has written extensively on love, marriage and sex. His latest venture treats of homosexuality, chiefly in the male, and of prostitution.

The sub-title of *Live and Let Live* is—*The Moral of the Wolfenden Report*. Essentially it is a plea for tolerance; that the deviant be not considered a *prima facie* criminal to be hounded by the police and prosecuted in the courts. The plea is well made, and will be concurred in by the informed.

However, the author is not content merely to plead. He changes roles and becomes the expositor of questionable propositions and the expounder of odd theories. Thus—"The crack troops of Sparta and Thebes—consisted of pairs of homosexual lovers." "The great major-

ity of homosexuals merely indulge in an affectionate relationship." "If the universe is indeed the outcome of a design then homosexuals . . . must be part of that design." This is further elaborated in the affirmation, "Nature does nothing in vain, therefore the homosexual and the bisexual as well as the heterosexual must surely have a place in the scheme of things."

The author is absolutely certain that some percentage of homosexuality is congenital, and that the reason why "public revulsion is so strong" is because "unconsciously, if not openly, we envy those who do what we ourselves would like to do but dare not."

Dr. Chesser's desperate argumentation is perhaps understandable in the light of Britain's savage persecution of the homosexual. The Wolfenden Report, enlightened in its recommendation, that homosexual acts of whatever kind, voluntarily committed between those over 21 years of age, be considered in the same way as heterosexual acts, yet endorses the penalty of life imprisonment for sodomy with a boy under sixteen.

Live and Let Live is a poignant witness of how much unreasoned passion the problems of homosexuality and prostitution can engender on either side. The book adds but little to the objective analysis of these problems.

IACO GILDSTON, M.D.
New York, N. Y.

AN APPRAISAL OF ELECTROENCEPHALOGRAPHY IN RELATION TO PSYCHOLOGY. By A. C. Mundy-Castle. (Monograph Supplement No. 2, Journal of the National Institute for Personnel Research, South African Council for Scientific and Industrial Research, May 1958.)

This is, as the author suggests, a rather critical appraisal of electroencephalography in psychological research rather than a review of the EEG findings in psychiatry. However, of necessity, the author touches on at least most of the important papers dealing with the latter subject as is evidenced by the 444 references. In this monograph there is a successful attempt to develop in an orderly fashion the relation of personality to EEG, then the neurophysiological aspects of the EEG and finally, the psychological implications of these particular neurophysiological findings. It is made evident that the EEG as a neurophysiological tool has much to offer in psychological research particularly in regard to such topics as central excitability, arousal, temperament, learning, and habituation.

Though interest in the EEG as a technique in psychological research dates back about 30 years and to Hans Berger, there has been a considerable increase in the productivity of such research in the last 10 years. The results of what now has been discovered certainly foretell of considerable advancement in our useful knowledge of the basic mechanisms underlying psychological processes. This short monograph is highly recommended to psychiatrists of all learning for though it revolves about the use of EEG it is not focused on clinical electroencephalography *per se* but rather correlates quite well much information concerning basic and therefore important aspects in psychology and hence in psychiatry.

W. J. FRIEDLANDER, M.D.,
Boston 30, Mass.

THE PSYCHOLOGY OF PERSONALITY. Edited by J. L. McCary. (New York: Grove Press Inc., 1956, pp. 383. \$1.95.)

This book presents 6 modern approaches to the study of personality which vary from small footpaths to large avenues. The chapters, perhaps by design of the editor, improve as the book progresses. In the first chapter, Dr. Leopold Bellak grapples unsuccessfully with the task of presenting a review of psychoanalytic theory which will not seem ludicrously out of date. Psychoanalysts will always suffer from Freud's insistence that others accept his system altogether or not at all. We could use his great contributions better if he and his followers had contented themselves with developing an approach, as the title of this book suggests, rather than a system. Psychoanalysts have made larger claims than any other group of psychologists or psychiatrists to a comprehensive and accurate view of human behavior. Yet paradoxically they have done almost nothing themselves to validate their theories in an acceptably scientific manner. We can count on the fingers of one hand the psychoanalysts who have themselves conducted serious investigations such as Fisher's studies of perception and dreams. If a modern exponent of psychoanalysis adheres to Freudian doctrine, what he says seems archaic; if he flexibly involves himself with other contributions he seems then to write less and less about psychoanalysis.

Dr. Raymond Cattell contributes a chapter chiefly devoted to a review of his work on the factor analysis of behavioral traits. The fruit in Dr. Cattell's vineyard seems to ripen slowly. His chapter should interest theoreticians of personality, but offers little to the clinician. Dr. George S. Klein reviews the contributions

of studies of perception to the theory of personality. He summarizes some rather recondite, although potentially significant investigations. Unfortunately, he penalizes himself and his readers with bad writing. I will put in the pillory one particularly grotesque example of this to remind scientists that they have an obligation to communicate clearly as well as to think clearly. If they cannot do one, how can we know they can do the other? The following sentence actually occurred: "The upshot is a curious situation in which vigorous points of view, often solidly enough anchored to measurable phenomena, move in parallel fashion over the same terrain, each encouraged by the seeming success of its tools to go its own way with little concern for others."

Dr. Margaret Mead next describes contributions of anthropology to the study of personality. In the next chapter, Dr. Nevitt Sanford reviews the approach to personality of those studies which contributed to the book, *The Authoritarian Personality*, of which Dr. Sanford was himself a co-author. Dr. Sanford and his colleagues combined certain psychoanalytic theories with techniques of sociology and clinical psychology in a clever study of behavior along the dimension of independence vs. submission and tyranny, the last two conceived as expressing opposite sides of the same coin. Dr. David McClelland concludes the book with an ostensible review of what the other contributors have said. Fortunately, he includes in this a summary of some of his own contributions to studies of traits and motives. He writes thoughtfully about the ways in which later experiences modify the effects of earlier experiences and why they cannot always easily modify such effects.

This book exemplifies an increasing number of published reports of symposia in our subject. I think many of them, including this one, fall between two levels of writing. The contributors have insufficient space to furnish in detail the evidence for many of their statements; this can irritate the informed reader who will want to study the original reports of investigations. On the other hand, they write at a level of sophistication too advanced for the novice; and this may irritate the busy clinician who wants, unwisely perhaps, something he can immediately apply in his everyday work. Should psychiatrists read this book? Certainly not if they hope to reform their practices by instant application of these "approaches." Yet the psychiatrist who wishes to learn about work on the growing edge of the psychology of personality may inform himself about much of such work by reading

this book, especially the chapters by Drs. Sanford and McClelland.

IAN STEVENSON, M.D.,
University of Virginia
School of Medicine.

HEREDITY AND EVOLUTION IN HUMAN POPULATIONS. By L. C. Dunn. (Cambridge, Mass.: Harvard University Press, 1959, pp. 157. \$3.50.)

One of the happiest marriages in the history of science may be likened to that between mathematics and physics. In our own time it is the marriage between genetics and evolutionary theory. In the present small and very readable volume Professor Dunn shows why the union is so like a continuous honeymoon. Genetics, the science of heredity is to evolutionary theory as nuclear physics is to atomic theory. Genetics supplies the answer to the question: What are the raw materials upon which evolution works? The answer that genetics supplies is: The genotype, that is, the genetic constitution of the organism as contrasted with its manifested characteristics (the phenotype). Genes forming the genotype mutate, and mutations are part of this raw material upon which natural selection works in influencing the differential fertility of the different genotypes. This year, 1959, we are celebrating the demonstration by Darwin of the high probability of natural selection. What Darwin did not have available to him was Mendel's discovery of particulate inheritance. Inheritance and evolution are a matter of population, in that genes are exchanged in the gene pool of a population. Hence, the understanding of what transpires genetically in populations is of the first importance for an understanding of the nature of the evolutionary process. It is precisely this that Professor Dunn is concerned to make clear in this admirable little volume which may be cordially recommended to all classes of readers.

ASHLEY MONTAGU, PH.D.,
Princeton, N. J.

THE PHENOMENOLOGICAL PROBLEM. Edited by Alfred E. Kuenzli. (New York: Harper & Brothers, 1959, pp. 321. \$4.50.)

This is a collection of 14 articles which have appeared in 10 different journals between 1939 and 1957. It is the hope of the editor that "this collection will be regarded as truly a set of 'working papers,' not just a book of readings." Designed for the younger men in the field, it is meant to stimulate discussion in upper-level seminars, particularly for majors

in clinical and social psychology and should clarify what is meant by a phenomenological emphasis in modern psychology as well as achieving a greater degree of integration of knowledge within the fields of clinical and social psychology. The contributors are Hadley Cantril, Arthur W. Combs, Lawrence K. Frank, Richard Jessor, Abraham S. Luchins, Robert B. MacLeod, Theodore M. Newcomb, Victor Raimy, Carl R. Rogers, Saul Rosenzweig, M. Brewster Smith, Donald Snygg and Daniel W. Soper.

A.G.

PSYCHOLOGICAL PROBLEMS IN MENTAL DEFICIENCY. 3rd Ed. By *Seymour B. Sarason*. (New York: Harper and Brothers, 1959, pp. 678. \$6.50.)

Ten years ago S. B. Sarason brought together, for the first time, about 350 widely scattered psychological articles and monographs on the non-biological dimensions of mental retardation. Dr. Sarason has once more served by appending the last decade of pertinent research to his two previous editions. The third edition reports and evaluates the produce of more than 650 social science writers on mental retardation. The result is an exhaustive source book.

All 3 editions treat chiefly of the impact of cultural and socio-economic forces upon general intelligence, psychometric performance, and academic proficiency with the retarded. The summary evidence courts the view that the brighter garden-variety mental defective is etiologically derived from these several variables. Such a thesis invites fresh momentum towards *early* educational therapy, or indeed, for *early* case work intervention with the retarded family. The moron is not, apparently, as intrinsic a part of mankind as the currently nebulous genetic view of human intelligence pretends.

Part I of the book is identical to all prior editions. As well, the new Part II of the third edition is already well circulated as *Mental Subnormality* (Basic Books, 1958), as a monograph supplement of the *American Journal of Mental Deficiency* (1958), and as a *Genetic Psychology Monograph* (1958).

Moreover, Sarason has made no effort to integrate the recent research with the older. In a burst of candor he excuses this shortcoming on the dual bases of lack of enthusiasm and of time. More justly, it might be remarked that the psychological research into intellectual subnormality has grown too vast and too varied to be compressed within a single book. Instead,

the field now requires more specialized manuals of assessment practices, training and treatment techniques, and lastly, an evaluation in depth of the implications of subcultural research for current notions of intellectual development and learning theory.

DAVID GIBSON,
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LONG-TERM ILLNESS. Management of the Chronically Ill Patient. Edited by *Michael G. Wohl*. (Philadelphia: W. B. Saunders Co., pp. 748, 1959. \$17.00.)

Part I deals with general principles in the management of chronically ill patients. Included are discussions of the best hospital settings for the chronically ill, home care, principles and organization of facilities for rehabilitation, and psychological problems associated with long-term illness. Part II contains the therapy of specific diseases. Chronic psychoses and severe neuroses are apparently not considered to be long-term illnesses. For example schizophrenia, perhaps the most important cause of prolonged disability, is not discussed. One finds no reference to the management of either the hysterical patient or the paranoid workman claiming compensation, both familiar types in departments of rehabilitation.

Most of the chapters reflect the thinking of experienced clinicians who know both the limitations and the potential benefits of drugs and surgical measures in treating the various chronic illnesses. Throughout, the importance of an optimistic, kindly and reassuring attitude on the part of the medical team is stressed. Special pleading appears in a few places. We find broad-spectrum antibiotics advocated in the treatment of rheumatoid arthritis. The rationale consists of a possibility that bacteria, perhaps of the pleuropneumonia-like group, may be the cause of the disease. We learn that evaluation of the long-term effectiveness of the antibiotics is incomplete. Surely it is wrong to advocate such measures unless a very critical evaluation has been completed.

Generally speaking the book can be recommended. Many physicians will find it useful for reference. Hospital psychiatrists have here a valuable compendium of the treatment of chronic illness. The book deserves to be in hospital libraries. In planning a second edition it might be well to take account also of chronic mental disorders.

W. B. SPAULDING, M.D.,
University of Toronto.

A DESCRIPTIVE DIRECTORY OF PSYCHIATRIC TRAINING IN THE UNITED STATES AND CANADA, 1960. 3rd Ed. Compiled under the Auspices of the Committee on Medical Education of the American Psychiatric Association. (1700 18th St., N. W., Washington 9, D. C., pp. 116. \$3.00.)

The Directory is comprised of three sections. Section I contains full information for applicants for certification in Psychiatry and Neurology, and for applicants for certification in Child Psychiatry. Section II consists of descriptions of residency training programs in psychiatry, approved by the Council on Medical Education and hospitals of the American Medical Association and the American Board of Psychiatry and Neurology. Section III lists the Canadian hospitals approved for advanced graduate psychiatric training, by the Royal College of Physicians and Surgeons of Canada.

Copies of the Directory can be obtained from the Washington Office of the APA, 1700 Eighteenth St., N. W., Washington 9, D. C.

S.L.

HANDBOOK OF NEUROLOGICAL DIAGNOSTIC METHODS. Edited by *Fletcher McDowell, M.D.*, and *Harold G. Wolff, M.D.* (Baltimore: Williams and Wilkins Co., pp. 201, 1960. \$4.50.)

This handbook has been developed over the past 28 years by the members of the Neurological Division of Cornell University Medical College. The present manual represents the most recent revision.

The first portion describes a method of inquiry to elicit evidence of gross structural disorders of the nervous system as well as disturbances involving personality and life adjustment. There follows a detailed account of the neurological examination. The second part consists of descriptions of the various techniques used in carrying out 17 special procedures required for neurological investigation together with their interpretation. Worthy of particular mention are the chapters on visual fields, examination of an aphasic patient, cystometry, electroencephalography, electrodiagnostic procedures and lumbar puncture, the latter including a table describing the cerebrospinal fluid findings in many diseases. In the final portion of the book various neurological emergencies such as coma, acute head injuries, status epilepticus, ventilatory failure, etc., are considered together with their management. The last chapter consists of a questionnaire for students on neuroanatomy, neurophysiology and clinical neurology. The ability to answer

these questions correctly is regarded as the minimum of information essential to an intelligent understanding of diseases of the nervous system.

The handbook is clearly designed for medical students in their clinical years but it should be of value also to medical practitioners for quick reference. It reflects the mature judgment of a group of outstanding neurologists, expressed in a clear, concise manner. It can be highly recommended as an up-to-date and balanced exposition of modern diagnostic methods in neurology and its size will permit a student to carry it with him for use while working on the wards.

HERBERT H. HYLAND, M.D.,
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KLINISCHE PSYTHOPATHOLOGIE. 5th Ed. By *Kurt Schneider.* (Stuttgart: Georg Thieme Verlag, pp. 166, 1959.)

Kurt Schneider's clinical psychopathology is, in his own words, "psychopathological symptomatology and diagnostics." It is based on the "empirical dualism" distinguishing (a) abnormal personalities and their experiential reactions from (b) sequelae of diseases and malformations. (c) Can be subdivided into a somatological (or etiological) and a psychological (or symptomatological) column. Clinical and psychopathological data and discussions are given on a variety of topics. A particularly interesting chapter deals with cyclothymia and schizophrenia. This chapter contains, among other considerations, a few pages on delusion which belong to the very best this reviewer read for years on this knot of problems. This fifth edition of a remarkable book is written with commendable selfdiscipline by an author of highest renown, wide experience and profound erudition. It certainly fully deserves its success.

EUGEN KAHN, M.D.,
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IRRWEGE DER MENSCHLICHEN GESELLSCHAFT (ERRANT WAYS OF HUMAN SOCIETY). By *Julius Bauer.* (Liestal: Ars Medici Lüdin AG, pp. 151, 1959.)

The author of this book on "Errant Ways of Human Society" is an unusually capable, well known physician, professor and research worker. The many insufficiencies and deficiencies of Western Culture weighed so heavily on him that he just had to write this medical-psychological critique on them. It is earnestly hoped that he is feeling better about it now. He was bitter about the herd that runs after the

leader; he regretted the "infantilism" and the stupidity of ever so many citizens caught in the web of conformism. Unless the individual would be given a chance to mature and to do some thinking of his own, the professor had slim hope for the development of a "mentally mature society" with an appropriate, well organized democracy.

EUGEN KAHN, M.D.,
Baylor University,
Houston, Tex.

THE EFFECT OF PHARMACOLOGIC AGENTS ON THE NERVOUS SYSTEM. Proceedings of the Association for Research in Nervous and Mental Disease. Vol. 37. Edited By *Francis J. Braceland*. (Baltimore: Williams and Wilkins Co., 1959, pp. 450. \$13.50.)

In the preface it is stated that this book contains "the chemical experience, considered evaluations and aspects of the research activity of many outstanding investigators, as well as reviews of the literature." Forty authors, in 26 papers, discuss methods of evaluating drugs which affect the nervous system, the pharmacology and clinical use of such drugs, and some of the underlying biochemical mechanisms which influence mental health and disease. No useful purpose is served by itemizing the contents or the contributing authors.

This collection of papers covers a wide range of subjects and reflects the immediate interest of many investigative groups in neuropharmacological subjects. For the investigator, clinical or experimental, it is of immediate and lasting value. Several of the papers should be of practical import to the practising psychiatrist or internist, and to those entering these fields the papers as a group will interest, instruct and stimulate.

E. A. SELLERS, M.D.
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DIE CEREBRALE GEFÄSS-SKLEROSE. By *Hans E. Kehrer*. (Stuttgart: Georg Thieme, pp. 238, 17 ill., 4 tables, 1959. \$6.70.)

This handy little volume treats the diagnosis, treatment and social aspects of cerebrovascular sclerosis. It begins with descriptions of the objective signs of the apoplectic stroke

and the periods of restitution. The constitutional types are considered and various forms of cerebral pathologies presented. Of the subjective signs are described: vertigo, aural noises, headaches, trigeminal neuralgia, glossodynia, sleep disturbances, etc.

Of the psychiatric symptoms involved, the author discusses in detail: torpidity, irritability, personality changes, weariness, lack of concentration and judgment, diminution of affect, memory and thinking capacity, disorientation, fabrication, depression and paranoid tendencies.

He points out the areas where arteriosclerosis may be detected by tactile investigation, retinal examination and tests such as digital compression of the carotid. He then discusses the vascular calcifications made evident through roentgenology, angiography, encephalography and examination of the cerebro-spinal fluid.

Special chapters are devoted to the pathogenesis of cerebro-vascular sclerosis and to the various therapies. Among the latter are considered: venesection, hemostyptics, stellatum anesthesia, cortisone, anticoagulants and vasodilators. In trigeminal neuralgia, surgery is suggested only if non-surgical remedies have failed. He advises to try small doses of insulin, hydantoine, vitamin B and ergotamine.

Vertigo and nausea are relieved by hydergin taken sublingually and by priscophen. Ear noises are treated with theomagnal and histamine preparations. For ocular scotomata Ronicol compositum is used. For Parkinsonianism, akineton is suggested and the feeling of fatigue and weakness may be mitigated by the antihistaminic soventol, which may, however, become habit-forming.

The relief of psychic symptoms is described in a special chapter that contains some original ideas. The "sociological involvements" refer to the application of civil and criminal laws in the activities of cerebral arteriosclerotics.

In the last chapter the author points out that the overwhelming majority of known celebrities in all walks of life, from antiquity down to modern times, retained all their intellectual prowess and emotional control to the very last, irrespective of their age. This disproves the accepted assumption that senility is the inevitable sequence to senium.

HIRSCH L. GORDON, M.D.,
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THE ADOLF MEYER RESEARCH LECTURE

THE STUDY OF DEFECT¹

PROFESSOR SIR AUBREY LEWIS, M.D., F.R.C.P.²

I believe I am the first Adolf Meyer Lecturer to have enjoyed the privilege of working at the Phipps Clinic in the days when Dr. Meyer was its head. It was therefore with exceptional pleasure that I learnt I was to have this opportunity of recording my personal debt to him. Tributes to the outstanding man in whose name this Lecture has been established have taken many forms, and American psychiatrists know better than we who came to Hopkins from abroad, what his services have been to psychiatry in this continent. But it is right for us who carried back to our own countries what we had learnt, to say what we owe him: the example of his integrity—his moral and intellectual integrity—and his conception of the humane aims of our specialty. These exercised a force upon his pupils whose effect can still be discerned in the psychiatric developments of Great Britain and some of the Scandinavian countries. No doubt it is a mistake to look around in one's middle age and decide that in comparison with the great men under whom we served our apprenticeship we are a lesser breed of epigoni, busy in dotting i's and crossing t's: it would, however, be no mistake to say that for the progress we have seen in psychiatry during the last quarter century we owe much to the labours of predecessors, very notable among them Adolf Meyer, teacher and exemplar.

I have chosen to speak of the study of defect. This may seem a paradoxical choice, since of all the wide issues in psychiatry mental defect is the one which Dr. Meyer least considered in his oral teaching and his writings. In his Salmon Lectures (32) he acknowledged the relative lack of plasticity and modifiability in defectives, and the pas-

sage might be taken to suggest that because of his melioristic passion, the intractability of this group of constitutional weaknesses put them outside the scope of his concentrated thought and effort. Such an inference would be, I think, mistaken. Dr. Meyer was distressed by the common attitude of superiority and even contempt towards the mentally defective: he tried to counter it by emphasizing "that there are perfectly good and useful imbeciles and that it is the use, and not only the quantity of the assets which decides human desirability" (31). But lacking clinical access and experience in these conditions, and having so much work to his hand in other areas of psychiatry, it is not surprising that he said and wrote very little about the intellectually handicapped.

The intellectually handicapped—in using such a phrase I am perhaps begging a question? At home I should almost certainly be told that I am, for this is a contentious issue with us. Because of it mental defect has become a murky concept. The most recent and outspoken inquirer (48) into this vexed matter concludes that

the urge to get away from purely intellectual concepts of mental deficiency and to substitute the criterion of social competence, has thus left us with a situation which is fantastically complicated—or perhaps "muddled" would be a better word.

I shall be returning to this cardinal issue: I mention it now, as a reminder—at any rate for us in England—of the fuzzy outlines and unsteady basis of the object of our studies in retardation, or defect (as I think we may still call it).

It has been until lately a neglected branch of psychiatry. But in research this is now happily untrue. The rate at which fresh knowledge about mental defect has been accumulated in the last 20 years contrasts strangely with the slowness with which pub-

¹ Read at the 116th annual meeting of The American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

² The Institute of Psychiatry, The Maudsley Hospital, Denmark Hill, London, S.E. 5, Eng.

lic authorities and doctors have given up regarding it as an Ugly Duckling. In few countries does the care of defectives receive the administrative and financial support that is accorded to psychotic patients—extramural facilities for them are weaker than those offered to the neurotic who seeks help in outpatient departments and day hospitals; and, most disconcerting of all, the bulk of psychiatrists do not regard this branch of clinical work as lively and rewarding.

Yet its notable recent triumphs are surely the prelude to a wide advance. The doors are opening fast. At least 5 distinct metabolic anomalies have been detected, so that possible ways appear of aborting their ill effects on mental growth: the genetic peculiarity of mongolism has been disclosed in the extra chromosome produced, we may suppose, by non-disjunction; challenging evidence has accumulated on maternal conditions during early pregnancy which may retard a child's mental development; the capacity of imbeciles to learn has been found greater than we thought. These are advances, fit for application to treatment and prevention, which are as considerable as any made in the study of other forms of mental disability during the same period. Professor Böök(5) says that in the field of mental deficiency we can see some of the most brilliant contributions of genetics to psychiatry; that statement might be extended, I believe, to cover the contributions of biochemistry and perhaps of psychology also. In spite of this arresting efflorescence of research in mental deficiency, it remains the branch of psychiatry that seems least attractive to our recruits. For a vacant post in the mental deficiency hospitals competition is less keen than for posts of the same standing in the other mental health services. Yet the prestige of any subject commonly rises when it is known to be advancing in basic knowledge that can be applied to human affairs. It may be objected that though this sort of prestige impresses informed on-lookers and attracts research workers it does not move doctors to take up the practice of a special branch of medicine. This I doubt: while recognising, of course, that many other factors besides impressive scientific advance determine the choice of a particular

career in our profession. Professor Merton's investigation(30) showed that the process begins early. The recent study by Professor Pasamanick and Dr. Rettig(39) has confirmed that in the eyes of medical students psychiatry still ranks low among the specialties; and one may suspect that if subdivisions of psychiatry had been explored, work in the mental deficiency services would have been found near the bottom of the list.

Is this poverty of esteem because the study of defect is unimportant to modern society? Far from it. In England and Wales—to take the statistics best known to me—the expectancy of admission to a mental deficiency hospital is four for every thousand male births, and three per thousand female births: over a quarter of all the beds for mental disorder are reserved for mental defectives; besides the occupants of these 58,000 beds in mental deficiency hospitals, there were nearly 80,000 ascertained defectives receiving community care from local health authorities in 1955. In spite of many causes for divergence in prevalence estimates, there is substantial agreement between surveys carried out at different times and in different places during this century which indicate a prevalence rate of between 0.8% and 1.0% of population, or 3% to 3.5% of the population under the age of 18, exhibiting varying forms or degrees of defect. This figure proclaims the rough extent of the aggregate personal misfortunes, the waste and the socio-economic handicaps which widespread mental defect implies for a civilized community. It is true that these are crude statements. Defect is not a biological entity, or indeed a psychological or pathological entity, but rather a congeries of morbid conditions. Its prevalence is not an absolute, but a conditional estimate. The cultural values and attitudes of a society have much to do with its recognition and may determine how heavy will be the economic and social burden it creates. Moreover, here kindness may be cruel, and efficient provision a hardship: for in a wealthy, humane, highly organised society people who are poorly endowed may be set aside and debarred from living a normal life, so that they cannot contribute their self-respecting mite to the common

stock or fulfill their side of the social contract, whereas in a ruder, less exacting society they might be integrated into the life of the community and be indistinguishable from the common run of its members. And the extent of the liability is mounting: the social and medical advances which permit mongols and other handicapped children to survive, lead to an appreciable increase in the prevalence of defect: a fourfold increase over the last 30 years in the prevalence of mongols in the population of children aged 10 years, as Carter(7) has recently shown. Such considerations reinforce the argument that here in defect we have an enormous social and medical issue—or rather network of issues. They underline the disturbing paradox: mental defect is a challenging, insistent, promising branch of psychiatry, yet psychiatrists are not, on the whole, drawn towards it.

It is all the stranger when we consider that the study of defect promises to throw light not only on its own path but on some of the byways of the rest of psychiatry—byways so often traversed that they have become ruts leading into bogs. There are important and popular divisions of psychiatry in which the law of diminishing returns is painfully evident, so that there is much cry and little wool. This cannot be said of the study of defect at the present time, nor of its potential relevance to cruxes that puzzle psychiatrists generally. Now that the ice has broken here in the streams of biological, social and psychological research, our understanding of mental illnesses stands to profit from advances in knowledge of the pathology—psychopathology and somatic pathology alike—of mental defect. Perhaps the paradox I have been dwelling on is only a matter of time-lag. Among psychiatrists in England at any rate there has been, I believe, a perceptible quickening of interest during the last two or three years in the practice as well as the study of mental deficiency: it can be attributed to their awareness of the scientific stirring in the subject, and its closeness to other psychiatric issues of moment.

The concept of defect has, of course, long been based on a simple dichotomy, that many would say has now served its turn. It was summed up by Esquirol(10) in an epi-

gram—"The dement is a man deprived of the possessions he once enjoyed, he is a rich man who has become poor. But the defective has been penniless and wretched all his life." Esquirol—who said also "Defect is not a disease, it is a condition"—was herein making a distinction that had been firmly established in jurisprudence. The common law of England, from the 13th century, drew a line between the "natural fool," witless from birth, and the lunatic who "hath had understanding but by disease, grief, or other accident, hath lost the use of his reason." Similarly in the early Brehon Laws of Ireland. It is an obvious way of dividing those who have never been, from those who have ceased to be, mentally normal. Yet this commonsense differentiation took a long while to achieve clinical sanction. At the end of the 18th century the medical distinction between dementia and defect took a long while to achieve clinical sanction. At the end of the 18th century the medical distinction between dementia and defect was blurred, as we see very plainly in the writings of such leaders as Philippe Pinel and Johann Christian Reil:

Insanity in one of these forms can go through a sort of transformation, emerging in another form, so that one sees melancholics pass into mania, some manic patients fall into dementia or idiocy, and sometimes even some idiots pass into a temporary attack of mania and then fully recover the use of their reason (Pinel) (41).

Such being the jumble, Esquirol was rendering some service to clear thought by asserting the distinction he did, with sharp and authoritative precision. But it is significant of the whirligig on which our thinking about these matters seems to turn, that we are now veering back in some respects to the position which had been assumed by Esquirol's predecessors, and which seemed to have been abandoned more than a hundred years ago. A few months ago a Committee of the Group for the Advancement of Psychiatry, in their brochure on basic considerations in mental retardation, wrote(15):

Historically the concept developed that deviant children could be classified accurately into clear-cut categories such as the psychotic, the neurotic, those with character problems, and

the mentally deficient. More recent experience has underscored the difficulties inherent in differential diagnosis. In a substantial number of cases the diagnostic term attached to a given patient depends upon the orientation of the examiner rather than upon the presenting symptomatology or developmental history of the patient.

Such subjectivism is an indictment of our discipline (if we may continue to call it a discipline, after that), but it shows the way the wind is blowing.

Classification is usually a jejune theme. In this instance it has the value of a signpost, betokening changes in the direction of our thought about the nature of defect. The latest swing is expressed in the 1957 report of our Royal Commission(42):

The basis for this (the traditional) distinction between the mentally ill and the mentally defective is practical rather than scientific. Broadly speaking, people who develop a mental illness in adult life and people who have been mentally retarded since birth or childhood need and receive different forms of care and treatment. On the other hand, the term "mental defectiveness" as well as the term "mental illness" covers a wide range of mental conditions, and there is a body of opinion which considers that it would be more suitable to treat some forms of mental deficiency in the same hospitals as the milder forms of mental illness than to accommodate all types of mentally defective patients together in one hospital. It is also a fact that some diseases which affect the brain, at whatever age they occur, result in a mental condition similar to that of a person whose mind has never fully developed, and general degeneration of the mental faculties in adult life sometimes has a similar result. One of the questions on which opinions differ widely, is whether the term "mentally defective" should be confined to people who are subnormal in intelligence, or whether it should also be applied, as it sometimes is at present, to some whose intelligence is normal, being near or even above average, but who show serious lack of maturity in other aspects of their personality.

After lengthy discussion of the question the members of the Royal Commission concluded that the general class "mental disorder" should include disability from defect as well as illness; and in the Mental Health Act which became law last year their

recommendation was adopted. Of course neither Royal Commissions nor Acts of Parliament can make us use for medical purposes categories which we do not think useful and apt; but the statutory changes were in fact the response of legislators to a strong trend of informed medical opinion. The implications of this trend reach far, and I shall return to it.

The revolutions of opinion about how defect should be classified and treated derive from historical influences more extraneous to medicine than is commonly supposed. Certain of these deserve closer regard.

In the first phase social issues—such as criminal responsibility, and capacity to control one's possessions—dominated systematic consideration of the nature of defect. Men stressed its kinship to the limited capacity of children to reason, to judge moral or intellectual issues, and to act appropriately. Hence came feudal claims to wardship of the land of a "natural fool," "purus idiota," and the definition of

an idiote or a natural foole is he who notwithstanding he bee of lawfull age, yet he is so witless that hee can not number to twentie, nor can he tell what age he is of, nor knoweth he who is his father, or mother, nor is able to answer any such easie question.

At the same time influences of an older date caused defectives to be credited with guileless virtue, so that "innocent" and "crétin" (chrétien) were considered appropriate terms for them.

As we move through the centuries towards our own time, philosophers have more and more to do with the matter. Vives, the pupil of Erasmus, developed the principle that in education the process of learning is determined not only by the subject matter to be learnt but by the nature of the learning mind. And, concerned as he therefore was to adapt methods of instruction to the peculiar needs of the learner, he became a pioneer in urging the special requirements of the mentally defective and the deaf. A century later came Locke, insisting that all knowledge derives from experience, by way of sensation and reflection, *i.e.* introspection—a view half accepted by Condillac, with consequences that are still discernible in our methods of treating de-

fect. Condillac, in his famous model or myth of the animate statue endowed only with one modality of sensation, illustrated his belief that from sensations all the mental operations, including desire and abstract thought, are genetically developed: hence it followed that anyone who would educate children who are handicapped from their earliest years must foster a dual process, training them in observation and training them in reasoning.

Everybody knows how these views, and probably those of Helvetius, determined the persevering experiment by Itard 150 years ago which, misguided though it was in aim, put an end to the long era of hopelessness and neglect for the imbecile. All that has since been done, and is still being done, for the education of the mentally defective harks back to that patient application of 18th century philosophy.

In the 19th century the extraneous forces came not from philosophy but from biology: and within medicine, from morbid anatomy.

The biological mold into which current knowledge about defectives was poured was at first largely anthropological, in the spirit of Blumenbach and Prichard—and of course Gall. Interest in the size and shape of skull became intense. Medical writings on defect in the first half of the 19th century are cluttered with cranial measurements. Esquirol devotes six or seven pages of his textbook to considering the value of such measurements; Griesinger likewise. But little was gleaned from all this craniometry. Thomas Fuller had put the matter in a nutshell—"their heads (those of naturals) sometimes so little, that there is no room for wit; sometimes so long, that there is no wit for so much room."

Another illegitimate offspring of biology and anthropology was the long-lasting conception of mental defect as the last or the "atavistic" stage in the degeneracy of a stock; it was in its heyday when propounded by Morel, it passed into its decline with Langdon Down and, last of all, Cruikshank: and was deeply involved in the pedigree-haunted terrors of those who told us about the Jukes and the Kallikaks.

In this century the dominant influences upon defect have come from more dispersed fields of knowledge—from metabolic studies,

from epidemiology, genetics, and—in grateful mutuality—from psychology, which owes to mental defect the incalculable impetus given by Binet's brilliant development of mental tests between 1904 and 1911 (2,3,4). In our time investigation into mental defect has been responsive—sometimes weakly, sometimes strongly—to every wind that blows through medicine: witness the sizeable output of papers on the effect of "tranquilizing" drugs upon defectives, and the little series of reports a few years ago on what prefrontal leucotomy and hemispherectomy could do for some disturbed imbeciles. The Zeitgeist seems to have been quite busy, fixing the advances, and ensuring the periods of stagnation, in this branch of psychiatry.

There is, however, one tributary to the stream of progress that has received, I think, too little attention. For the last hundred and fifty years or more it has flowed powerfully though intermittently.

This is the study of language, and particularly its application to the work of teaching deaf children to speak. There are several curious themes which intersect the mesh of this story. I do not want to go too far back, so I shall remind you only of Lord Monboddo, the forerunner of Darwin. Lord Monboddo(6) maintained that speech is not performed "naturally," but is acquired by custom and exercise, and in support of this quoted the "wild men who had been reported, from the 14th century onwards"—

I say in the first place that of all those savages which have been caught in different parts of Europe, not one had the use of speech, though they had all the organs of pronunciation such as we have them, and the understanding of a man, at least as much as was possible when it is considered that their minds were not cultivated by any kind of conversation or intercourse with their own species . . . One of these was caught in the woods of Hanover as late as the reign of George I and for anything I know is yet alive . . . He was a man in mind as well as body, as I have been informed by a person who lived for a considerable time in the neighbourhood of a farmer's house where he was kept and had an opportunity of seeing him almost every day, not an idiot, as he has been represented by some who cannot make allowance for the difference that education makes upon men's minds; yet he was not only

mute when first caught, but he never learned to speak.

Here, in 1774, we have a topic familiar in the earlier history of defect—can a “natural” or feral man be educated; we have also the prelude to the hotly argued debate as to whether these wild men are mute and brutish because they have been brought up away from human kind, or because they have congenital mental defect. You may be wondering whether Monboddo borrowed his ideas from the French philosophers then busy with such matters. I think not. He tells us that he developed his opinions without knowledge of Condillac’s views (though he later read an extract from the *Essai sur l’origine des connaissances humaines*).

Lord Monboddo clinched his argument about the origin of speech by adducing a special case.

What puts the matter out of all doubt, in my apprehension, is the case of deaf persons among us. And their case deserves to be the more attentively considered, that they are nearly in the condition in which we suppose men to have been in the natural state. For, like them, they have the organs of pronunciation; and, like them too, they have inarticulate cries, by which they express their wants and desires. They have likewise, by constant intercourse with men who have the use of reason, and who converse with them in their way, acquired the habit of forming ideas; which we must also suppose the savage to have acquired, tho’ with infinitely more labour, before he could have a language to express them. They want therefore nothing in order to speak, but instruction or example, which the savages who invented the first languages likewise wanted. In this situation, do they invent a language when they come to perfect age, as it is supposed we all should do if we had not learnt one in our infancy? Or do they ever come to speak during their whole lives? The fact most certainly is, that they never do; but continue to communicate their thoughts by looks and gestures, which we call signs, unless they be taught to articulate by an art lately invented.

Monboddo then describes the methods used by the Abbé de l’Epée in Paris and by Braidwood in Edinburgh, and continues:

If it had not been for this new-invented art of teaching deaf persons to speak, hardly anybody would have believed that the material or mechanical part of language was learned with so much difficulty. But if we would get an Orang Outang, or a mute savage such as he above-mentioned who was caught in the woods of Hanover, and would take the same pains to teach him to think that Mr. Braidwood takes to teach his scholars to speak, we should soon be convinced that the formal part of language was as difficult to be learned as the material. For my own part, I am fully persuaded that the minds of men laboured as much at first, when they formed abstract ideas, as their organs of pronunciation did when they formed articulate sounds; and till the mind be stored with ideas, it is a perfect void, and in a kind of lethargy, out of which it is roused only by external objects of sense, or calls of appetite from within. It was this want of ideas which made the Hanoverian savage pass, in the opinion of many, for an idiot.

The parallel here with Itard’s (19) reasoning in the famous case of Victor is obvious: the education of the wild or natural man is to be modelled on that of the deaf-mute. For Monboddo the exponent of how to teach the deaf is the Abbé de l’Epée; for Itard, 30 years later, it is de l’Epée’s pupil and successor, the Abbé Sicard. There were, of course, conspicuous differences between Itard and Monboddo; one was a young doctor of 25, the other an elderly judge, a busy Lord of Session at Edinburgh: and whereas one was enthusiastically occupied day by day with treating deaf children at the Institution Nationale des Sourds-et-Muets, the other was able only to speculate about them and about others deprived of a normal upbringing. But the line of thought was the same, and it brought lasting benefits to the defective.

Itard’s example fired Séguin, who never faltered in his admiration for the man and his achievement. And like Itard—possibly because he had been Itard’s pupil—he looked back in his efforts for the defective to the principles which underlay the successful education of deaf-mutes. But it was not to the principles of de l’Epée and Sicard, but to those of their brilliant rival, Jacob Rodriguez Pereira, that he turned for guidance. Whereas de l’Epée had been content to teach the deaf to communicate

by signs and finger-spelling, Pereira taught them to speak. Séguin(43) drew an analogy between Pereira's basic principles and those which had enabled Séguin himself, as he believed, to solve the problem of treating defect.

I am not unaware that the problem of educating deaf-mutes was attacked and even solved in the last century from a wider standpoint, that of Pereira, which is strikingly analogous to that which I have used to solve the problem of treating mental defect.

This analogy bore practical fruits in many countries. When Séguin came to this country it was to Dr. Samuel G. Howe, an expert in the treatment of the deaf and the blind, as well as of the feeble-minded, that he first went. In Germany, at the same time, Dr. Saegert, the head of the Asylum for Deaf-Mutes in Berlin, established his school for defectives (1842). Earlier in the century Albrecht Vering in Münster, Guggenmoos in Salzburg, K. F. Kern in Möckern, and Katenkamp in Oldenburg had conducted the education of mentally defective, deaf and blind children in the same schools, on the same broad principles.

There was, it is clear, a powerful and significant transfer from the theory and practice of educating the congenitally deaf, to the training of the mentally defective. This derived from recognition of the cardinal role that language and speech play in mental activity. Esquirol said that

what determines the peculiar character of the different varieties of defect is the use of language, that essential attribute of man, given him to express his thought : it is the feature most clearly related to intellectual capacity in defectives.

Fifty years ago Binet and Simon endorsed Esquirol's view :

So one can distinguish the patients according to their ability to speak or to learn to read, because these are not inherent faculties but practical attainments which depend on the energy and level of certain faculties : and that is all measurable.

The issue still has contemporary importance. In current research, when we talk of

problem-solving and thinking, we are forced to consider how words enter into the formation of concepts, and facilitate generalizations. And since even the simple operations which imbeciles can carry out, may entail the solving of a problem, we have to regard closely the defective's way of attaining concepts, and of using verbal generalization to this end.

The dependence of concepts on words was stated in its most uncompromising form by Max Müller(34).

What we have been in the habit of calling thought is but the reverse of a coin of which the obverse is articulate sound, while the current coin is one and indivisible, neither thought nor sound but word.

We know from studies in aphasia, such as Head carried out, and from many experimental inquiries how untenable this extreme view is. But there is much convincing evidence that words aid thinking and are for some conceptual processes indispensable—what C. E. Osgood has called the "representation level" of organization in cognitive processes.

Vigotsky, Luria and other Soviet psychologists(46, 25, 26) have emphasised the directive and adjuvant function of speech in normal mental development. Lublinskaya(24), for example, showed that children could differentiate signals much more quickly when verbal labels were attached to them, and that differentiations thus verbally reinforced were more stable and generalised than those elaborated without it. Similarly the Iowa workers—Spiker and his colleagues (44)—have demonstrated that when a child is given a common name for a set of stimuli, or a relation name (*e.g.*, middle-sized), he learns more quickly to generalize and discriminate in an instrumental task : assigning a verbal symbol, or label, to approved stimuli may make it more likely that a child will be able to transpose his learning to a new situation.

To determine how far this adjuvant role of words is held good for imbecile children, two of my colleagues in our Research Unit(16, 17, 18, 35, 36), Dr. O'Connor and Dr. Hermelin, devised and carried out during the last few years a series of experiments, some of which I should like to de-

scribe very briefly, though I fear that in doing so I shall rob them of their lucidity. O'Connor and Hermelin examined Luria's hypothesis that the significant deficit shown by poor verbal capacity is not so much an aspect of defective intelligence as an inherent difficulty in making the connection between words and motor behaviour. They found that though imbeciles (mean I.Q. 40) did not differ from normal children of the same mental age in certain tasks requiring discrimination and transposition, they were more quickly able to reverse a response previously learnt (*i.e.*, to move, for a reward, the larger of two black squares): whereas almost all the normal children could express the principle of discrimination in words referring to size, only one of the imbeciles did so. But when the reversal experiment was repeated with a group of imbeciles who were trained to state correctly in words that they had moved the bigger square each time that they did this, and then given the trials in which they were required to move the smaller square to obtain their reward, there was no longer a significant difference between the number of times they needed before they were successful and the number needed by normal children of the same mental age. It could be concluded that verbal reinforcement had made good a deficit in the imbeciles—a deficit which in other contexts we might regard as an advantage. They forsook a learned motor habit too easily, until a word—a concept—reinforced it, or, as we might put it, until verbal self-instruction induced a "set" which caused negative interference when the opposite choice between stimuli was imposed on the task. Their behaviour was the antithesis of that which might be shown by an obsessional or by a patient with organic cerebral disease who perseverates. It is open to several theoretical interpretations. It might be, as Luria supposes, that defectives are handicapped by a failure (in Pavlovian terms) to bring the second signalling system, which operates with words, fully into intimate and regulatory relation with the system that determines motor behaviour.

But whether the interpretation be along the lines of Pavlov's or Skinner's or Osgood's theoretical formulations, it is evident

that the use of verbal symbols, and especially those which refer to connections that have meaning, is the *pons asinorum* of defectives. If they can be helped to cross that bridge they have advanced considerably and may even be on the road to a modest literacy, such as Itard struggled so hard to attain in poor Victor.

In the next experiments imbeciles learnt to transfer a verbal response (a three-letter noun) from a pictured object to its written equivalent, and then to discriminate between each of the written words and two others with one letter different. Finally when they made ten correct choices of written words in succession, the subjects were presented with the four written words and asked to say what these were, so that their "reading score" (the number of correct responses out of a possible twelve) could be assessed. Before the experiment these imbecile children had failed to pass Burt's scholastic reading test at the four-year old level; now they learnt to read and they retained to some extent what they had learnt. They improved further in their ability to discriminate between written words after they had traced the letters of the correct word with their fingers, thereby suggesting that the relation between motor and verbal modes of behaviour may still be one of weak reciprocal aid. The simple conditioning technique used in this experiment is, of course, a familiar if old-fashioned way of teaching a child to read: here its interest lies in the demonstration of what reinforcement and practice can achieve in this domain for severely retarded children. The experiment also demonstrated that the conditioned response could be very rapidly transferred to new material, when the task was changed—a potentially important finding.

In further investigations into discrimination of written words, O'Connor and Hermelin selected 24 children of I.Q. 30-39, mean I.Q. 33.7, and having trained them to discriminate a printed word from three others (each of four or five letters) varied the size of the letters (height between 3 mm. and 10 mm.) in a determined sequence, to discover whether changes in size helped the defectives to learn to discriminate shape, or hindered them in this,

through being mistaken for the relevant attribute of the stimulus display. The result was in keeping with G. A. Miller's (33) findings. Shape discrimination was found to be easier when alternative discriminatory features in another category of visual stimulus, size, were also offered, provided that the subjects had not in their first discriminatory tasks been able to rely on constant size in the letters of the cue word whenever exposed. A learning set could be established in the first stages of the experiment which worked for or against the generalisation that size of letters mattered in discriminating between words.

The same investigators found that when imbeciles (I.Q. 40) had learnt to repeat a number of unrelated words, it was significantly more difficult for them to learn an equal number of familiar words which were synonyms of the first; but if a second lot of words was given, related by sound instead of by sense to those first learned (e.g., rhyming with them, as in "heel" and "meal"), then learning the second lot was facilitated: if the two sets of words were not connected by sound or meaning, there was neither advantage nor disadvantage from having learnt the first set. In part this conformed with the learning behaviour of normal young children; similarities in sound help association between words. But it also indicated—contrary to Luria's findings—that in these defectives some semantic generalisation takes place, and causes interference. Moreover when O'Connor and Hermelin asked their imbecile subjects three months later to give their first associations to the words contained in the original test set, and classified the responses, it was clear that those who had in the previous experiment been given synonyms to learn now gave a majority of meaningful associations (85%), whereas those who had previously had sound-connected sets to learn, or sets unconnected either by sound or meaning, showed no significant preference in their associations and did not differ materially in this respect from a control group who had not taken part in the experiment three months earlier. The tentative conclusion is that in these imbeciles training in learning semantically connected words leads to an

effective "set" which is relatively stable, and educationally valuable.

You may interrupt at this point to ask what all this has to do with the medical aspects of mental defect. Very interesting to academic psychologists, no doubt, but clinically trivial, and unpractical. To this objection I would reply that studies which throw light on the defective's ways of thinking and learning can hardly be trivial, nor, if they further his use of language, are they unpractical. Consider the three great Frenchmen whom I have already quoted: Itard (19) thought it worth his while to struggle for four years to teach Victor to speak and read: Séguin (43) asked us to picture "the difficulty, the weariness, the exhausting, heart-breaking efforts that these experiments entail for the teacher": he is referring to the experiments in which he tried to teach the hydrocephalic defective Amedée how to articulate words distinctly, and to read them; and Alfred Binet at the end of his joint *Mémoire* with Simon on the intelligence of imbeciles, pleaded eloquently for experimental study of the process of thinking and especially of generalisation. If a more modern justification is called for, it is surely implicit in our therapeutic aims. We want defectives to lead as happy and socially normal a life as possible. A socially normal life in literate societies presupposes, even at a low level, some education. It calls for acts of decision, and even, in very simple terms, for discrimination between words: to take a crude example, the defective going about in a modern city needs to recognise the symbols which distinguish public toilets for men from those for women, or the numerical symbols which denote the particular bus he wants to use. If he is capable of engaging in some productive occupation, his ability to connect symbols with concepts, and concepts with motor behaviour, is of social importance—though occupational adequacy is far from being the whole of social adequacy. As Sarason and Gladwin (28) have lately emphasised, our culture makes demands on learning capacity in all those, severely subnormal or not, who are trying to live in society. This is no novel view; the most cogent declaration of our duty towards defectives in this regard

was made by Binet and Simon in 1907(2). Reviewing the pedagogic and other reasons for retaining in special schools what they call verbal work, alongside the concrete manual tasks, they said :

These reasons apply particularly to the school. There are other reasons, social reasons, which are still more imperious. Nowadays, especially in towns, it is necessary that people should be able to read, write, count and express themselves appropriately. It has been rightly pointed out that reading is the triumph of abstraction and that a defective may take two years to learn to spell words out even at the most modest level : never mind, if the thing is possible, with however great an effort, that defective ought to learn to read. What matters is not the level of his intelligence, but his social status, and there he will suffer if he is illiterate. In questions of this sort, psychological and educational indications should give way to the demands of ordinary life ; necessity decides it.

The indications of psychology and education now point in the same direction as the demands of daily life.

It would be appropriate here to turn aside from imbeciles, so limited in their capacity to learn and think, in order to consider the social adequacy of that much larger group, the high-grade defectives. But before looking at this tangled issue I should like to refer, cursorily, to other studies of imbeciles carried out by members of our Unit—studies that are complementary to those I have been describing. They examined particularly the effects of motive upon performance, in its social bearings.

In a series of laboratory and workshop investigations(8,12,13,23) they demonstrated that the performance of imbeciles who had been given an external incentive improved significantly, when compared with that of a control group of imbeciles, in a variety of motor tests ; moreover the imbeciles acquired a skill—folding cardboard boxes—which improved strikingly when the social conditions in the workshop approximated to normal, in that each imbecile worked alongside a high-grade defective who did the preparatory glueing and the two boys constituted a working unit ; they could readily see their joint work and in most cases took pride in their attainment ; this was true even of patients with an I.Q. of

only 20 or so. Further experiments by Clarke and Hermelin(9) (which preceded Hermelin's studies of concept formation) showed that incentives act differently, as might be expected, upon imbeciles of diverse personalities : but an appropriate incentive brought the patients to the point at which they could perform repetitive tasks, of the sort industry requires, as well as high-grade defectives could. The imbeciles could thereafter partly support themselves through the payment they received, for work that gave them pleasure and satisfaction.

Since personality and personal relationships have been experimentally shown to have an effect upon the level which imbeciles can attain, we thought it desirable to examine the differences between severely subnormal children who remain in their families and those who have been committed to institutional care. In the ensuing survey by Grad and Tizard(14), there were 150 families with an idiot or imbecile living at home and 100 families with a similar defective child who had been in an institution for between one and 5 years. The children and their families differed in many respects, inevitably : and it is impossible to review briefly here the social and psychological characteristics of these two groups. The occupational data, however, bore out the experimental findings that there are considerable differences in the abilities of imbeciles which can not be attributed to differences in level of intelligence. A low intelligence score did not represent as severe a handicap as did a concomitant physical defect. Physical disabilities were, of course, common : half the patients, both those in the institution and those at home, had such disabilities, especially cerebral palsy and epilepsy. Gross multiple handicaps of this sort were, however, more frequent among the institutional patients. Although there were some almost untrainable and unemployable patients, burdened with an accumulation of defects, it seemed that with suitable training at least 10 to 20% of imbeciles can be employed in useful remunerative work, provided there are economic conditions of full employment, and satisfactory care for them at home or in a hostel.

Defects of temperament were among the

handicaps many of these imbeciles exhibited: some were restless and excitable, others torpid and apathetic. Among the 150 imbeciles over the age of 16 in this investigation, 13% were judged to be over-active or almost uncontrollable, and 28% sluggish and inactive, but of course these summary epithets do not convey the varied anomalies of personality. The investigation cast light, sometimes heartening and sometimes disconcerting, upon the interaction between doctors and welfare or other workers, on one hand, and the severely sub-normal patients and their parents on the other. The social issues raised here were complex and crucial.

It is at this point that a British psychiatrist tends to leave the comparatively pure air of the field study and the experimental workshop for a sultrier atmosphere in which there is much contention about notions of sociopathy, and about enactments that seem to darken counsel. For in our recent Mental Health Act (29)—admirable in so many respects—there are, as I have mentioned already, some definitions which trail clouds of dubious nosology behind them. Please forgive me for saying more about them than I would if they bespoke only a national idiosyncrasy. I believe they reflect ideas about the nature of defect which are widespread and which are crowned with the nimbus of such adjectives as “progressive,” and “dynamic.” I am not sure they deserve these epithets.

The new Act banished the term “mental deficiency”: henceforth officialdom does not know this category, it has been swept away to the limbo where “idiocy” and “insanity” and “asylum” lie, waiting no doubt for the euphemisms that for the present have supplanted them. According to the Act the generic term “mental disorder” is extended to include “arrested or incomplete development of mind.” Three classes of mental disorder are defined—subnormality, severe subnormality and psychopathic disorder. So far so good: the decay that afflicts any word referring to an unpleasant reality has overtaken “mental deficiency”; and Parliament and the World Health Organisation urge us to say “subnormality” instead—no great hardship. But there is another term

defined in the Act—“psychopathic disorder.” The definition runs:

a persistent disorder or disability of mind (whether or not including subnormality of intelligence) which results in abnormally aggressive or seriously irresponsible conduct on the part of the patient, and requires or is susceptible to medical treatment.

This harks back to the recommendation of the Royal Commission, two years earlier, proposing that high-grade defectives and psychopaths

should be recognised as together constituting one main group of mentally disordered patients, the other two groups being the mentally ill and severely sub-normal.

It is, of course, in keeping with the strong trend, both in Britain and in the United States, to shift the emphasis in high-grade defect (or retardation) from intelligence alone to other features of personality, to minimise inherited as against environmental causes, and to use as a main criterion of such defect social maladjustment and emotional insufficiency. This standpoint has much in common with the current view, expressed by Masland, Sarason and Gladwin (28) that

cultural and environmental factors . . . through the establishment of unhealthy or inadequate patterns of intellectual response, may prevent the optimum functioning of the mind in a person whose nervous system is basically capable of normal activity [and that] “within certain broad limits one can distinguish those mentally subnormal individuals whose disability is attributable primarily to a demonstrable defect of brain structure or chemistry from those whose malformation is the result of hearing deficiencies resulting from unfavourable environmental influences.

The advantages of this way of looking at the matter are manifest, but it is sometimes pushed so far that intelligence, about which we know a great deal, is played down in favour of emotional development and social fitness, about which, on the whole, we still know little. The approach can be a stimulating one for research, but over-zealously adopted it could have a retrograde effect

upon administrative and clinical practice, in which the new legislation adjures us to follow it.

The distinction I am drawing is perhaps too sharp: scholastic and intelligence test performance is still the main criterion of diagnosis for subcultural defect or feeble-mindedness, but the auguries point to its supersession. The *Manual on Terminology* (1) recently published by the American Association for Mental Deficiency lays it down that mental retardation is

subaverage general intellectual functioning which originates during the developmental period and is associated with impairment in one or more of the following: (1) maturation, (2) learning, and (3) social adjustment [and states that] "social adjustment is particularly important as a qualifying condition for mental retardation at the adult level, where it is assessed in terms of the degree to which the individual is able to maintain himself independently in the community and in gainful employment as well as by his ability to meet and conform to other personal and social responsibilities and standards set by the community.

To use such concepts as these for purposes of research will be an arduous and slippery business. What its consequences might be when applied in epidemiological inquiries can be inferred from the instructive findings reported in the thorough and valuable Onondaga County Study. Dr. Gruenberg and his colleagues (11) found that standards vary strangely, such factors as colour of skin and place of residence affected the ascertainment of children judged to be mentally retarded; mental retardation, Dr. Gruenberg concluded, is "a complex set of manifestations of some children's relationship with their immediate environment." This is true, but such complexity cries out for heuristic simplification: otherwise confusion threatens. The conscientious inquiries into the effect of cultural background on the diagnosis of retardation which are reviewed in Sarason and Gladwin's comprehensive report seem to indicate that in this area

"Chaos Umpire sits

And by decision more embroils the fray
By which he reigns."

While we struggle in this darksome realm, it is hazardous to put our trust in shifting semblances: or, to be more explicit, in social and emotional indices that vary with the observer and, more disconcerting still, vary with the environment. In her trenchant critique of psychiatric findings, which pillories many a lapse from logical and scientific rectitude, Barbara Wootton (48), herself a sociologist, takes up this weakness, states it in a clear proposition and explores its corollaries. Recognising that mental defect tends increasingly, in Great Britain at any rate, to be diagnosed, not by an intellectual test but by the defective's inability to accommodate himself to the demands of a highly industrial society, she takes the next step—which is to recognise that

if, as may be supposed, the capacity for social adjustment conforms to a more or less normal pattern of distribution, the cut-off point at which this defectiveness is held to be established must depend upon how exacting this demand for adjustment happens to be

so that it can come about that the criterion of defect may depend upon such completely adventitious factors as the state of the employment market.

In a less sophisticated age we should have said that one of the merits of full employment was that it made it easier for mental defectives to obtain employment. Now apparently we have to say that it actually reduces the number of such defectives. To appreciate the full significance of this situation we may imagine what would happen if similar reasoning were applied to the analogous case of some incontestable physical disability, such as the loss of a limb. Full employment certainly makes it easier for legless persons to get jobs, but no one in his senses would take this to mean that under full employment there are fewer persons without legs. Similarly full employment makes it easier for ex-prisoners to get jobs; but that is not to say that full employment diminishes the number of ex-prisoners, as distinct from the number who are able to get employment. Such statements would be manifestly absurd; but their absurdity well illustrates the difference between a disability which is established by a criterion that is, and one established by a criterion that is not independent of current standards of social competence.

And, Lady Wootton adds,

so long as defectives are subject, as they are, to legal and other disabilities, the significance of this difference is much more than semantic. If defectives are deprived of full civic rights and responsibilities, and even in some cases of their personal freedom, and if the number of defectives varies with the state of the employment market, it follows that some people are liable to lose their status as fully responsible citizens or to be deprived of their liberty, merely because employment is bad.

Lady Wootton's argument, thus lucidly stated, seems cogent. I say seems, for we psychiatrists, sublimed students of complexity that we are, distrust lucid arguments: convincing syllogisms, we suspect, are superficial, and what seems obvious is probably incomplete and over-simple. But surely in this instance we must concede something to the criticism: and we must admit that if we fall in with the tendency now to equate "high-grade defect" with "psychopathic personality" because of the relativity of the two concepts and their essential dependence on some standard of social competence or adjustment, it will widen unduly the social door of entry into a traditionally medical category. In Tredgold's well known textbook of *Mental Deficiency* (45), we may read that

it is probable that if the real nature of mental defect were more generally appreciated many, although not all of those who are called psychopathic personalities would be found to be certifiable under the Mental Deficiency Acts.

Such an affirmation raises issues which far transcend the apparently diagnostic and semantic questions. It is pleasanter to consider Jastak and Whiteman's (20) conclusion that

the retarded do not impose a disproportionate load upon community resources either in the form of legal infractions or excessive demands for social services . . . mental subnormality, it appears, need not connote an inability to fill an acceptable social role.

I would like here to underline the distinction between social criteria, and social determinants, of defect. Nothing I have been

saying is intended to minimise the manifest importance of the social factor nor the potency of emotional pressures and twists. Quite the opposite. A large part of the studies in defect by our Research Unit has been directed toward the social problem, as the title of O'Connor and Tizard's book (37) made clear. And as for the role of emotion, I would recall a passage from *Leviathan*

Naturall wit consisteth principally in two things: celerity of imagining . . . and steady direction to some approved end. On the contrary a slow imagination maketh that defect, or fault of the mind, which is commonly called dullness, stupidity . . . And this difference of quickness is caused by the difference of men's Passions . . . And the difference of Passions proceedeth partly from the different Constitution of the body, and partly from different Education.

It was the same Thomas Hobbes who said "The Light of humane minds is Perspicuous Words." In the psychiatry of defect our words will become perspicuous and the concepts they denote illuminating only if we probe further into how constitution, education, environment and emotion determine those differences of intelligence which Hobbes thought fundamental between man and man.

And so I finally come to causes. In psychiatry we seldom distinguish sharply between etiology and pathology; and in the network of preceding events it is profitless to insist on a strict hierarchy of causes, epidemiological, psychological, clinical and the rest. It is, however, plain that in the whole area of defect prospectors equipped with new tools can hope to "strike it rich." The vein has already been opened by metabolic studies, and by the genetic investigations that have revealed peculiarities in chromosome formation in mongolism—both, as Linus Pauling (40) lately reminded us, matters of molecular structure about which knowledge is decidedly on the move.

What is known and what is inferred about the etiology of defect has been critically reviewed within the last year or so by Professor MacMahon as well as by Dr. Masland (27, 28). Their masterly surveys make detailed consideration by anyone else

superfluous for the present. However, among the diverse studies I should like to single out for reference those of Professor Pasamanick and Dr. Knobloch and their associates (21, 22, 38), because of the care with which their data have been collected and analysed and because of the attractive explanatory hypotheses they offer. I need not recapitulate to this audience the arduous investigations through which they believe they have demonstrated that disturbance in the circumstances of pregnancy and birth can bring about a continuum of cerebrogenic anomalies, manifest as disorders of behaviour, reading difficulties, tics, defect of varying degrees, cerebral palsy, and epilepsy. The complications of pregnancy (such as toxæmia and bleeding), dietary inadequacy in the mother during the months of pregnancy, abnormal delivery, and premature birth were judged responsible for sub-lethal (as well as lethal) misfortune to the child. Mental retardation, according to their findings, is conspicuous among the sub-lethal consequences that may ensue when the reproductive process is deflected from its normal course. If retardation is accompanied by physical evidence of neurological damage, a relation of cause and effect is habitually and widely accepted, at any rate so far as perinatal damage is concerned: but the challenging conclusion of Knobloch and Pasamanick urges us to consider that lesser degrees of prenatal and perinatal cerebral damage may produce defects unaccompanied by detectable neurological signs, defects which are commonly attributed to heredity and post-natal influences. The body of evidence they have produced as warranty for these conclusions is impressive; and some of their more specific hypotheses are provocative, especially that which connects insufficient diet—perhaps of protein—during the critical early months of pregnancy with mental retardation in the child. Still more provocative are some recent developments of Pasamanick's views. Incorporating his continuum of reproductive casualty with Locke's and Helvetius's *tabula rasa*, he supposes that men are conceived equal in intellect (apart from a few who inherit neurological defects), and that it is exogenous brain damage, "life

experience and the socio-cultural milieu influencing biological and psychological function," that make us differ one from another. This rather egalitarian hypothesis would exalt the power of environmental influences high above their wonted credit: if it proves correct—and no one can call it incorrect who has not examined with equal care Pasamanick's evidence and the contrary evidence which speaks for polygenic inheritance as the main determinant of human differences in mental ability—then the possibilities that open out do not merely concern the prevention of defect and other ills, but the raising of normal human capacity throughout the population. This would afford yet another instance of the wheel turning full circle. When Séguin devoted himself to experiments in educating idiots and imbeciles, he arrived at principles which had a larger scope than his medical obligations towards the defective. At the end of his book he wrote:

But if by a turn of the wheel, in compensation as it were, it happened that the solution of a very small problem brought with it the solution of a very general one; if it happened that while working away to settle the modest question of how defectives should be educated, one had found a formula precise enough to be applicable to education generally . . . then not only would one have rendered some service in a relatively humble sphere, but one would have laid the basis for a scientific method of education.

It is unlikely that Pasamanick shares all the St. Simonian optimism of Séguin: but in such experiments in preventing defect as he now advocates, lies much hope of illumination.

Few of us psychiatrists can have a clear conscience about mental defect. We have given it less attention than it required, and research has only belatedly concentrated on the pitiful and involved problems which it thrusts upon the clinician's notice. Now that much serious inquiry is in progress, it seemed fitting that the Adolf Meyer Lecture should be devoted to a cursory glance into this large area of research and action. I have not tried to do in one lecture what 21 notable contributors aimed at accomplishing in the Woods School Conference

(47) last year. Their survey and the current list of projects supported by your Department of Health, Education and Welfare show that the vineyard calls for diverse labourers to cultivate it in many places. I have referred to some work of which I have immediate knowledge, and to studies which illustrate the close interplay between developments occurring outside medicine and certain kinds of research that have been fruitfully prosecuted to elucidate and control defect. The work now in hand is inspiring. It looks as if future lecturers who choose this theme may have a rich harvest to report.

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DISCUSSION

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—We are indeed fortunate in the privilege of hearing one of Dr. Meyer's most brilliant students deliver this Adolf Meyer Lecture. Sir Aubrey Lewis' choice of subject is particularly appropriate since it brings before us a relatively neglected field. Dr. Meyer also tended, in his more or less obsessive all-inclusiveness that some of us remember so well, to pick out that area for discussion that seemed for the moment to be eclipsed in the blaze of light from some other interest in psychiatry.

There are a few points in Sir Aubrey's discussion on which I would like to enlarge. The statement is made that the field of mental deficiency is a rapidly moving one, replete with new research findings. Because of them, the specialists in pediatrics are, in this country at least, remarkably stirred. It is mostly pediatricians who are doing the teaching about the discoveries regarding the genetic defect in mongolism, and it is they who are spearheading new research institutes to look further into the

genetically determined metabolic disorders. Public health authorities have responded vigorously to the new knowledge, perhaps too vigorously. I heard a while ago that the New York City Health Department had run some tens of thousands diaper tests in hospitals and had yet to discover its first case of disorder of phenylalanine metabolism. But the test is very cheap and the cases which will certainly eventually come to light will have a chance to avoid phenylketonuri deterioration. That the manufacturers of test substances for ketonuria were all exhibiting at the American Public Health Association annual meeting but are not in evidence here at the annual meeting of the APA so far as I have noticed is evidence in favor of Sir Aubrey's conclusion that psychiatry neglects mental deficiency as an area of action.

Sir Aubrey noted that the Royal Commission urged a distinction between the mentally ill and the mentally defective as a practical measure. Paper number 123 of this meeting will report a survey of cases seen in out-patient services in Maryland. The abstract doesn't indicate that Mrs. Bahn intends to take up a point the survey made clear, so I will introduce it here. Analysis of the data by total number of visits to clinic by diagnosis showed that some diagnostic groups had very few visits while others showed treatment of somewhat greater length. Those conditions with the fewest visits carried the diagnosis of mental deficiency and mental diseases associated with aging. Those with the largest number of visits included psychoneurosis, the so-called functional psychotic states, epilepsy and character disorders. Except for character disorder or, as Sir Aubrey refers to them, psychopaths, which is often a diagnosis made at the end of long but unsuccessful treatment, the distribution of length of treatment seems to correlate rather well with prevalent notions about treatability; to put it bluntly, the clinics worked hardest and longest where they suspected success would be possible.

There is, of course, real reason to question whether this sort of categorization really holds. There are a number of reports in the literature indicating that some senile states respond well to treatment when treat-

ment is carefully adopted to the discovered needs of the patient. In the field of particular concern of Sir Aubrey, the long term prognosis is quite good, since all studies indicate that diagnosed mental defect is much more common in children than adults, and that the differences are not due to differential death rates. Lest you should feel this is merely an epidemiologic trick, let me point out that for many purposes the criterion of social adjustment sufficient to avoid medical or sociological detection of disease is a quite reasonable definition of health. On the basis of prognosis it is difficult to defend psychiatry's tendency to give short shift to mentally deficient patients. We have done it so long, however, that parents of such children don't like us very well anymore and turn to people who take a more realistic, in this case optimistic, so far as social adjustment is concerned, viewpoint in the matter.

The essence of the wish to separate mental deficiency from mental illness seems to me to rest in the recognition that mental deficients have, usually, a more or less static handicap so far as intelligence is concerned, though, as already noted, not in social adjustment. There is evidence, of course, that in some cases intelligence levels can be raised, but cases in which this can be achieved are still relatively rare. That test-intelligence is relatively static, however, does not mean that other personality parameters will share the stultification. There has been, perhaps, too easy a generalization that intelligence is an indicator of what the whole person can and will do. The evidence appears rather strong that maturation in other personality assets is not necessarily bound to the intellectual limit.

Sir Aubrey referred to the work of Pasamanick, Knobloch and their collaborators in the area of reproductive wastage and its consequences for survivors. This work rein-

forces the idea that the problem of the prevention of mental defect rests in insuring that the inherent capacities of the organism are protected and maintained. They have showed some of the places we must look for agents that can, too often irretrievably, reduce the *capacities* of the individual that are at their maximum at the moment of fertilization. From that moment on, the *inherent* capacity of the individual can, so far as we now know, go in only one direction, downward. The preventive task is to free the individual so far as possible from loss of capacity. Pasamanick and Knobloch have illustrated areas in obstetrical and pediatric practice where opportunities for prevention exist, but they have also showed, in their work on later development, that postnatal environment, in terms of psychological and sociological determinants offer equal and, probably, more available opportunities to protect inherent capacity.

One further point and I will stop pursuing the multitude of ideas stimulated by Sir Aubrey's presentation. The relative stability of defect states implies the newer types of psychiatric services that are now developing. We hear much of the deleterious effect of hospitals on people kept too long. This thinking is not applied so frequently to the effect of institutionalization on the mentally defective, though there is no reason to suspect that it is different. If it makes sense to offer home services to the schizophrenic or senile patient released from hospitals as soon as his severe behavior disorder is controlled, it must make sense to offer services easily available to the caretakers of mentally defective persons in the community. The development of such services and of the patterns of administration suitable to make them maximally effective are among the challenges presented to us in Sir Aubrey Lewis' very informative essay.

BATTEMENTS AND BRIDGES IN THE EAST : THE CZECHOSLOVAK PSYCHIATRIC CONGRESS WITH INTERNATIONAL PARTICIPATION¹

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It had long been my avocation while travelling about the world to learn how my colleagues elsewhere observe facts and form opinions—and to acquire a growing insight that the distinctions among “facts” and opinions are not as absolute as I had formerly imagined. When, therefore, I received an invitation from the Czechoslovak Ministry of Health to be “an honored guest and principal speaker at the First Czechoslovak Psychiatric Congress with International Participation,” I welcomed an opportunity to help re-establish long-suspended relationships with our colleagues within the Soviet zone of influence, and attended the Congress at Jesenek, from September 7 to 11, 1959. The following is a highly condensed report of its proceedings.

BACKGROUND OF THE CONGRESS

During the later periods of the Stalin regime, and especially during his prewar purges, all non-Marxist psychologic or sociologic ideologies grew increasingly suspect in the USSR, and those that could be considered anti-Marxist became anathema. To replace psychoanalytic and other “idealistic” theories, Pavlovian reflexology was elevated into a “materialistic organon of higher nervous function” which was to explain all behavior. This approach also seemed to offer two convenient corollaries : (a) that men differed according to their “neurophysiologic type,” thus justifying various assignments to different levels of responsibility, duty and reward and (b) that men could nevertheless be “conditioned” by appropriate “first and second-order stimuli” (*i.e.*, an appropriately controlled physical and symbolic environment) to achieve almost any kind of social adaptation, thereby also fulfilling a requirement (succinctly restated by Myasischev at the Congress)

that “*Marxist philosophy could not admit that man was basically irrational.*” However, during the interregnum of the Triumvirate, of Malenkov, and in the early days of Khrushchev, the freedom of investigation demanded by the nuclear physicists and temporarily given to writers, poets and composers was also extended to psychiatrists, who for a time responded enthusiastically and productively. Unfortunately, there recurred an intensification of the cold war with another tightening of the reins and a second wave of retractions and retrenchments—but again most recently, with a second thaw in international relations seemingly in the making, another era of communication and rapprochement in the sciences and the humanities seemed at hand. It was to take advantage of this that the Congress was planned in a land that had always been an ethnic meeting-point for East and West, and by scholarly and foresighted men who were personally acquainted with the best traditions and scientific resources of both.

PROCEEDINGS

After the usual addresses of welcome by Chairman O. Janota and various civil dignitaries, F. Knobloch of Prague University sounded what he hoped would be a conciliatory scientific theme for the Congress by pointing out that both “micro” (*e.g.*, physiologic and animal experimental) and “macro” (*e.g.*, individual or group analytic) studies were indispensable; *i.e.*, altered metabolism or physical trauma can affect cerebral tone and excitability, and “thus derange the temporary neural connections which develop in the process of habit formation.” After other such efforts to collate physiologic terminology and Pavlovian structuralism with the concept of effective residues of individual experience, Knobloch appealed for greater “collaboration of investigators from varied lands and standpoints.” But this moderating position was challenged by O. Vymetal, of the University

¹ Read at the 116th annual meeting of The American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

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of Olomouc, in a polemic idiom with which one soon grew familiar. Said Dr. Vymetal, "It would be too undialectic to absolutize one theory, but also eclectic to be complex . . . All Western philosophical orientations, in particular neopositivism, existentialism, and pragmatism combine an erroneous ontological outlook necessary for scientific idealism and their principles are not utilizable for scientific theory. We start out from the principles of Marxist philosophy, dialectic and historical materialism. This serves as a protective screen against further errors." Vymetal's position was apparently endorsed by the initial spokesman for the Soviet delegation, N. Myasishchev of Leningrad, who likewise asserted that "materialistic psychology is uncompromisingly antagonistic to psychoanalysis, existentialism, biodynamic theory (*sic*) and other theories. Only socialism can develop proper moral-psychologic characteristics and so prevent neuroses due to non-adaptational cortical reflexes. Psychotherapy, must therefore consist only of adjustments to reality and collective work activity." P. W. Bassin of Moscow stated even more explicitly that "since the beginning of this century, Soviet psychiatrists had anticipated Hartmann, Kris, and Loewenstein in their devastating criticisms of Freud," that Soviet science absolutely rejected all forms of Freudianism as a "reactionary, mythological idealism," that Freudian psychoanalysis had therefore been stamped out in the Soviet Union and, Bassin obviously implied, should be treated similarly if it reappeared in any of the associated People's Republics.

It was at this somewhat difficult juncture that I was put in the position of official spokesman for Western psychiatric thought. Sensing that the presentation of technical research which had been originally requested by the Congress Secretariat would hardly be appropriate to the situation, I first conveyed the official greetings from various Western scientific societies as authorized,³ and then spoke extemporaneously to the following effect :

We of the West employed three major approaches to the understanding of human be-

havior : the historic-philosophic, the comparative-experimental and the interdisciplinary-integrative. In this we were in obvious accord with our Soviet colleagues, since they, too, see man as the product of ethnic and politico-economic evolution, investigate even his highest neural functions in the objective experimental tradition of Sechenov and Pavlov, and study him currently by means of every one of the interrelated social sciences. Many of us in the West know this because we follow the Russian scientific literature—in fact, the U. S. Government subsidizes its translation—and because some of our leading neurophysiologists (*e.g.*, Karl Pribram, Horace Magoun, Grey Walter) had exchanged or were planning to exchange visits with Russians of the calibre of A. I. Oparin, A. Luria and (the late) Professor Bykov. Neurology is hardly a neglected science among leading psychiatrists in the West (*e.g.*, David Rioch, Ben Boshes, Roy Grinker), and even our orthodox psychoanalysts profess respect for Freud's basically biologic orientations. For that matter, most broadly trained psychoanalysts regard their sub-field as only (a) a special method of research into each patient's energy systems, personality development, unique concepts and values, and characteristic patterns of transaction, (b) a constantly improving but ever tentative set of correlated postulates about human behavior and (c) an individually adaptable, rather protean and essentially socially oriented mode of interpersonal therapy. Indeed, what we actually refer to by our somewhat unfortunate terms "psychology" and "psychoanalysis" is the integrated study of man's total adaptations to his material and cultural milieu, whereas our Russian colleagues really mean the same when they use the perhaps equally abstract concepts of "primary and secondary signals," "higher cortical analyzers and effector systems" or "conflicts between excitatory and inhibitory irradiations." As to ancillary experimental approaches, I could offer the Congress not only my own work, but studies by Gantt, Liddell, Pribram, Delgado, Mirsky and others that equalled in rigor and objectivity the classic experiments of Pavlov and, like his, led to certain basic biodynamic concepts of behavior that best fulfilled the criteria of breadth, economy and predictability required of truly scientific formulations. Certainly, the best psychiatric therapy everywhere utilized every available physical and environmental means to restore personal happiness and social usefulness. Excluding irrelevant economic or political considerations, then, it might well be that many of the differences between Eastern and West-

³ The American Medical Association, the Academy of Psychoanalysis, the Society of Biological Psychiatry and others.

ern Psychiatric thought consisted in the choice of words rather than in operational referents. In any case, we of the West, and perhaps all of those present, hoped that the Congress would help remove this semantic handicap to greater rapport and collaboration among us.

My talk ended the first day's session, and despite the courteously prolonged applause, there was no way of ascertaining whether it had been received as an admission of, and retreat from, Western confusions and weaknesses, as a challenge to conflict, or as what it was meant to be: a sincere offer to leave clanking arms and tattered standards behind in outmoded battlements, lower the drawbridges, and meet on common ground for friendly scientific concourse. That it was taken in all these ways—but fortunately mainly in the third sense by most of the leading Russian delegates—became apparent as the Congress progressed. The first indication of this beginning rapprochement occurred at a round-table discussion on Concepts of Neurosis scheduled that evening.

When again asked to contribute to the discussion, I reviewed the neuropathologic connotations of the terms "neurosis" and "psychosis" from Cullen and Feuchtersleben through the kaleidoscopic meanings of Kahlbaum, Charcot, Freud, Sullivan, Fromm, Jaspers, and then back again through Eysenck and Guiliarovsky to currently renewed assertions that "neurosis is simply a disease of the higher nervous system." I stated that we could agree even with this if the term *disease* were taken quite literally to mean a "dis-ease" or disruptive un-easiness experienced by an individual under circumstances that he had somehow come to regard as stressful and threatening. In such conditions (or, in Russian, with such "conditioning"), the subject would be called "neurotic" if he reacted with various physiologic (autoplastic or "psycho-somatic") and social-transactional (alloplastic) disturbances greater than those thought to be necessary or appropriate by most observers—yet not sufficiently severe in intensity and duration ("psychotic") to justify forced isolation and treatment. However, in view of the current expansion of the term "neurosis" to cover so many viewpoints, vectors and contingencies, perhaps we would sooner or later abandon it as no longer of etiologic, diagnostic or prognostic value, much as we no longer accepted the previously literal meanings of Hippocrates'

"frenzy," Galen's "hysteria," Kahlbaum's "vesania," or Prichard's "moral insanity." Instead, just as the physicists outgrew the notions of "phlogiston" or "cosmic ether" and progressively sharpened their lexicon, so should we also accommodate to more modern and scientific concepts of behavior and its vicissitudes.

Perhaps this discussion constituted a bit of a gambit, since I knew that in some sections of the Russian literature neuroses were considered to be quasi-neurological diseases subdivisible into neurasthenia, psychasthenia and hysteria, and my presentation of predominant Western views had definitely challenged this position. The reaction was not long in coming: as rendered by the English interpreter, a psychiatrist from one of the Eastern countries once again characterized me as "obscurantistic, unscientific, misleading, deviationistic, idealistic" and, as a final epithet, also "religious." I learned later that he had begun a third sentence—which the translator omitted—to the effect that my views served the interests of "American capitalism and imperialism"—but at this point the speaker was abruptly cut off by the Chairman as being completely out of accord with the scientific and fraternal spirit of the Congress. The Chairman's remarks were fully translated into all of the languages and were soundly applauded as an edict that this type of political and ad-hominem polemic would no longer be countenanced.

Relations were further improved by efforts of Eric Wittkower of Canada, who had arranged an "Informal Seminar on Psychosomatics" with Drs. Snieznievsky, Bassin and other leaders of the Russian delegation. Word of this had got around, and by the time the seminar assembled, it had acquired a multilingual and highly effective moderator in the person of Dr. Chertok of Paris and an audience of over 100 eager psychiatrists from nearly every country represented at the Congress, all of whom apparently anticipated not only fresh information but also that interplay of move and counter-move which makes chess so intriguing to Eastern intellectuals. Despite a special invitation, I had not intended to be present at this seminar for a number of reasons: first, that I had already used my fair share of time (I had been given a sec-

ond hour in a full Congress session to present my data and motion picture films); second, that I did not want the inference drawn that we were staging a Western vs. an Eastern team debate—or indeed, that there was any official “Western Delegation” at all; and third, I had full confidence that Wittkower could ably continue to represent modern holistic views in the field. However, some two hours after the seminar began, I passed through the Conference room expecting the meeting to be over, and instead was immediately drafted by the Chairman into what was an apparently amiable but highly animated discussion.

The question at issue, it seemed, was the key concept of *regression*. The Russians claimed that this simply meant an atavistic return to simpler forms of mesencephalic behavior in the presence of physiologic or pathologic cortical impairment, whereas Wittkower advocated the analytic-dynamic version that a person placed under any form of stress tends to resume just those patterns of conduct more specific to his own early years: e.g., an ulcer patient reenacts and suffers from the motile and gastric hyperactivities of the hungry child. Since neither Drs. Bassin nor Sniezhnevsky were willing to accept derivative clinical interpretations to support psychoanalytic premises, could I, the Chairman asked, furnish any experimental evidence bearing on the problem? I recollected several such bits of evidence: e.g., D. Levy’s record of a full-grown, agile dog which, as it became jealous of a rival pet, began limping again as it had done years previously when it was a puppy being tenderly nursed for a broken leg. Perhaps more fortuitously, I also adduced Pavlov’s own observations that when the terrors of the Leningrad flood abolished nearly all the conditioned reflexes in his dogs, *each reverted to patterns characteristic of its own early behavior*.

At this point Wittkower made an effective proposal: that instead of any further discussion of abstractions, each of us describe how he would actually treat, say, a 40-year-old male patient with a peptic ulcer. The Russians agreed, and outlined their procedure thus: first, they would take a complete personal history upon which to “base an understanding of the patient’s higher neural functions”; next, they would advise proper diets and prescribe drugs such as atropine, banthine, gastric alkalisers and mucoid gells to modify the “deviant conditioning of the neuro-somatic reflexes,” and finally, they would “foster counter-inhibi-

tion of the excessive higher neural excitation” by providing rest and relief from environmental stress—including, if necessary, “sending a telegram to the patient’s employer directing that his job be made easier.” Dr. Chertok (who as moderator, had sensed the possibilities of the interchange), Wittkower and I received this clinical outline enthusiastically; in fact, we pointed out that we might go even further; first, in securing richer details of the “personal history” through intensive analytic interviews, second, in neuro-somatic treatment by vagotomy or even gastrectomy if necessary, and third, by interviewing the employer personally. But I then raised a crucial issue once again involving regression and individual dynamics: suppose that the patient had been a deprived infant who had yearned for a devoted mother during childhood, and was now as an adult once more deeply disappointed that his wife did not properly fulfill a maternal role—would our Russian colleagues also “send a telegram” to the patient’s spouse directing her to treat him with greater kindness? Or better yet, would they, through personal influence and the communication of understanding, “decondition” the patient so that he (including his stomach) would no longer yearn for excess (ultraparadoxically conditioned) “cerebro-somatic” indulgence? Indeed, they would, said the Soviet psychiatrists present, whereupon the meeting adjourned for vodka in a spirit of jovial goodfellowship, the Russians claiming that we were really materialistic neurophysiologists at heart and Wittkower and I endowing them with the honorary title of psychoanalysts in training.

It was at this point that the members of the Soviet delegation cordially invited Mrs. Masserman and myself to come on a “professorial visit” to Moscow, and other representatives followed their lead with corresponding, but as yet necessarily unofficial, invitations to Poland, Rumania, and Hungary. Throughout the rest of the Congress there was a noticeable relaxation of tension, a greater mobility and freedom of communication and a generally increased atmosphere of professional friendliness—although, be it noted, all questions of economic systems, politics or international relations continued to be carefully avoided.

Later Sessions:—The next morning the conference was opened by Hans Hoff, Professor of Psychiatry at the famous University Polyclinic in Vienna and currently Presi-

dent of the World Federation for Mental Health—which, incidentally, the Soviet Zone countries, after an absence of ten years, were beginning to rejoin. Professor Hoff spoke eloquently of psychiatric problems that affected all nations: alcoholism, drug addictions, juvenile delinquency, and the many personality and cultural stresses that resulted from displaced populations, weakened family structures, changing social customs and industrial automation. No one could take exception to his review, nor his moving appeal to all nations for “human-co-existence”; on the contrary, he was accorded a deserved tribute.

Hoff was followed by E. Wolf (Prague) who, in a paper of comparable thoughtfulness, returned to the clinical problems of psychotherapy and correctly pointed out that the good results of various forms of psychiatric treatment did not necessarily prove the sometimes narrow and conflicting theoretical convictions of their advocates. In any case, the patient should not be permitted to regress to excessive dependence either on physical or symbolic-experiential therapies but should instead be treated with a degree of medical and environmental realism that would “inhibit the deviant behavior to the point of extinction.”

The rest of the Congress consisted of a diverse array of papers and discussions, representative samples of which, either read or distributed as typed abstracts, deserve mention under the following rubrics:

Child Psychiatry: T. Simson of Moscow attributed most childhood neuroses to “severe toxemias of pregnancy or childhood infections which affect the cortical cells . . . We understand neuroses from the position of Pavlov, either as overloading of nervous processes or as a deviation resulting from conflicting excitatory and inhibitory processes; nevertheless, such neural deviations may also be induced by errors in upbringing . . . in an unsmiling environment.” V. Kudriavtseva, also of Moscow, proposed that children with post-encephalitic aesthenia “due to cortical inhibition” should be given “more rest and easier tasks at school,” and J. Vitek of Prague gave it as his opinion that, “in nearly all of a series of cases of childhood neuroses, there were evidences of fine residuals of centrencephalic damage.” On the other hand, E. Bartsch of Berlin investigated the psychological effects produced in children

by frightening medical procedures and found that, if the hospital milieu were such as to make the child feel loved and protected, even encephalography left no physical damage or repressed dread. J. Fischer of Prague reminded us that we had not yet traced the vicissitudes of adult life to the traumatic experiences of infants or toddlers. In a group of 80 neurotics aged 7 to 17, G. M. Pivovarova of Moscow found “disturbances of carbohydrates and protein metabolism in all” and correlated these with a “weakened nervous condition and mental worry of long duration.”

General Etiology of the Neuroses: G. Destunis of Berlin could find evidences of hereditary factors in only 30 of his series of 300 neurotic patients; in the others, endocrine factors or physical traumata combined with psychological stresses to produce the disordered behavior. B. Alapin of Warsaw believed that fear of cancer and other neurotic symptoms in women could be attributed largely to a hormonal imbalance. C. Koupernik of Paris attributed many neurotic reactions to the traumata of loss, but pointed out that if, for example, a patient had been active in caring for a dying relative or friend, there might be a “free interval” of from one to three weeks after the loved one died before the neurotic reactions developed, and that a physician could intervene during this time to prevent or mitigate the onset of the neurosis. In this connection, J. H. Rey of London reflected that perhaps a period of mild reactive depression is favorable to eventual recovery, “since it is human to feel guilt which motivates the patient to make reparation to real or imaginary victims. Patients who cannot get depressed are difficult to treat.”

Special Etiology: A. S. Christovich of Leningrad, like Bruetsch of Indiana whom he did not quote, traced some psychoses to rheumatic encephalitis, and T. Nievzorova of Moscow attributed others to the misuse of ACTH. T. P. Hackett of Boston studied the deliria occurring after frontal lobe lesions and the hallucinogenic effects of thalamotomy, and concluded that both could be modified by psychotherapy. K. Szilagyi and his associates in Budapest could find no differences between normals and schizophrenics on the Quick (benzoate-hippuric acid) test. Z. Böszormenyi, also of Budapest, studied the effects of administering 0.75 to 0.80 mgm./K of diethyltryptamine intramuscularly to 24 psychiatric patients and 30 controls, and noted that the drug induced an “experimental psychosis” which lasted only 2 or 3 hours, but which was followed by “the appearance of latent artistic drives expressed in painting, poetry, etc.” H. Bultavova, *et al.* of

Prague also studied various anticholinergic hallucinogens, possibly related to those being investigated by L. Aboud in Chicago. However, J. Roubicek of Prague concluded that "Drug . . . experiments have not revealed the cause of endogenous psychoses, yet have founded a new field : experimental psychiatry . . . which can also utilize subjective experiences."

Psychiatric Therapy and Hypnosis : I. Hardi of Budapest treated various functional gait disorders by "electrotherapy, pharmacotherapy, narcoanalysis, and narcosuggestion." F. Volgyesi of Budapest, described his "Active Complexe Psychotherapie" as one that "turns to the cortex and is based on a purely intellectual approach" but did not correlate it with his previously advocated "Hypothalamic By-pass Hypnosis." I. Horvath of Prague reported that hypnosis induced "a marked facilitation of elective irradiation between cortical signalling systems, and good levels of extinction of old and working out of new conditioned reflexes which were quite stable after awakening, even when the patient could not verbalize the effect." S. Bethelm of Zagreb treated impotence by suggesting to mildly hypnotized subjects that they have erotic dreams, and noted that symptomatic improvement was heralded when the patients "dreamed of better contacts with the partner." V. A. Jasov of Moscow facilitated the induction and accentuated the effects of hypnosis by using barbiturates (especially the Soviet favorites, Medinal and Barmobil) but, like Bernheim three generations ago, wisely noted that the effects of this form of therapy are "conditioned less by the state of inhibition and more by the characteristics of the personality of the patient, the particulars of the pathogenic situation, the doctor-patient relationship, the content of the suggestion and the entire process of treatment." With this lead, N. Schipkowensky of Sofia warned again of the iatrogenic trauma of unskilled hypnosis, and recommended that deviant interpersonal behavior could best be resolved when both the patient and the therapist were fully awake. J. Dubois of Saujon also recommended a quiet environment and "affective neutrality" as most conducive to therapeutice results.

Alcoholism : The fifth and last day of the Congress was devoted to this topic, which is apparently as urgent a problem in the East as in the West. There were few claims as to single or even primary genetic, constitutional, developmental, dietary, psychologic or sociogenic causes for addiction to alcohol; faced with complex realities, serious workers in the field everywhere in the world soon abandon monothetic oversimplifications. Organic effects were

discussed by H. Casier of Ghent who noted that 10 to 12% of C-14 labelled alcohol was fixed in the tissue within 30 minutes, 25% in 3 hours, and that some still remained in the brain tissue after 15 days. Binding was most marked in the liver, which may account for hepatic cirrhosis in chronic alcoholism. P. Stokes, J. Reilly and O. Diethelm of New York thought they could correlate the emotions of alcoholics with specific chemical variations in their blood, whereas A. Povorinskii of Leningrad attributed the hangover to the "weakened hypnotic state of Pavlov." A. Bertrand of Paris found that alcoholism reduced industrial efficiency from 20% to 65% and F. Detengove of Tashkent observed that "ex-alcoholics become neurotic."

As to *treatment*, V. Borinievlch of Moscow regarded only the early stages of alcoholism as immediately amenable to psychotherapy, and J. Strelchuck of Moscow outlined the methods to be used for more advanced cases as follows : 1. Detoxication, vitamins and prolonged sleep, 2. The establishment of negative conditioned reflexes to alcohol, 3. Physiotherapy, psychotherapy and work therapy, 4. Enforced Antabuse medication for 6 to 12 months with 5. Reinforcement of the negative conditioning to alcohol as necessary. Zachepitskii treated alcoholism by "short conversations and collective hypnosis" ending with "negative conditioning for alcohol with the aid of apomorphine and thiurane." J. Duba of Prague reported that Stopethyl may safely be substituted for Antabuse, since patients cannot abolish its anti-alcoholic action by drinking vinegar. J. Dent of London observed that in alcoholics as in other neurotics "to be or not be—that is the anxiety." So why not drink, since we shall not die until tomorrow? But instead of "lulling the forebrain with sedatives," Dent recommended "stimulating the back brain with apomorphine." H. Faure (Bonneval, France) advocated three weeks of narcosis with barbiturates and Largactil, during which the patient was to be awakened thrice daily for "dream analysis, transference interpretations, group therapy and exposure to tape and motion film recordings of his previous behavior while intoxicated." J. Carrere (Epinary-sur-Orge) also insisted that his patients view motion pictures of their conduct during alcoholic-amnesic states, and reported that of 65 so treated since 1954, 29 have remained complete abstainers and 24 more "improved."

Other papers devoted to the *public health* and *legal* aspects of alcoholism may be summarized as follows : A. Tongue of Lausanne asserted that whereas the toxic effects of al-

cohol on social behavior varied from culture to culture, the alcoholic everywhere must be held responsible for his conduct. P. Jean of Paris indicated the extent of alcoholism in France by noting that his government now paid 80% of the cost of 3000 beds in public mental hospitals, and 1000 more in private ones, all devoted exclusively to the treatment of alcoholics. M. Marzynski of Lodz reported that the Polish Government "refused to use legal punishment, but insisted that the alcoholic undertake obligatory out-patient or group therapy." J. Skala, *et al.*, of Prague reviewed the Czech Government's program, instituted in 1956, of individualizing the treatment of neoabstinents vs. occasional or impulsive, vs. consistent or chronic alcoholics; however, he hoped that a revision of Law 87 "would stress educational and economic weapons rather than repressive ones."

And thus ended a meeting of nearly invariably informed, keen and eager minds assembled, for the first time in over a generation, in a Psychiatric Congress with truly International (East-West) Participation.⁴ To say that far-reaching scientific, philosophic, or even methodologic accords were reached would be unrealistic, but to deny that mutual understanding and respect were fostered that might lead to greater rapprochements in the future would also be to underestimate the undeniable success of the Congress.

⁴ Since the proper editing of a professional report is not conducive to the expression of personal sentiments, this last paragraph on Czechoslovakia should, I suppose, have been discarded by my cortico-differential analyzers as an idiosyncratic artifact. But art or not, the fact remains that my most significant memories of the Congress concern not its surface proceedings but the unfailing graciousness of our Czech hosts to every representative of every country, the growing warmth and cordiality the Russian and other Eastern delegations displayed toward nearly all the visitors from the West, and the half-embarrassed gift-giving and the undeserved but sincere expressions of gratitude from a spontaneously assembled farewell delegation on the occasion of our departure. But even more poignant were the final remarks of one newfound friend still separated from us by a curtain of governmental distrusts and suspicions: "Please write—but until official matters between our countries clear as we hope—don't yet write too often!" Nor is it much comfort to recollect that there are always two sides to a curtain, and that we, too, may still be impelled to make a like remark to a visiting Soviet scientist.

DISCUSSION

NATHAN S. KLINE, M.D. (Orangeburg, N. Y.).—This paper by Dr. Masserman constitutes a model for the reporting of conferences. He has accomplished the extraordinary feat of not only succinctly summarizing the contents of a vast number of papers but also portraying the dynamics of the conference itself. Since I had the opportunity of lecturing at Charles University in Prague only a few weeks before the conference I can attest to the accurate portrayal of the *dramatis personae*. In a recent monograph⁽¹⁾ I have discussed quite fully the organization of psychiatric care and research in the USSR with an appendix covering the situation in Czechoslovakia. My own report is dry and factual compared with the present paper. Almost all of us who venture into the Eastern European countries and have provided our hosts with any sort of time schedule have been most cordially received. Psychiatrists and other types of researchers have the same sort of time schedule as do most of us. If a psychiatrist whose name was only vaguely familiar to us were to call from a local hotel announcing his arrival and expecting to be entertained and shown the courtesies of our institution "today and tomorrow because we are leaving the next day" one would hardly be expected to drop everything else in order to comply with such a request. This is particularly true if it turned out to be the fifth or the fiftieth one in a row. In other words, for those of you who intend to visit these countries and would like to see the institutions, make certain that plenty of advance arrangements are made.

The only point about which I have to carp is a minor one. At first glance we are somewhat staggered by the extraordinarily high cost of items such as coffee or "luxuries." Translated directly into American monies or even in terms of "how many hours one must work to earn a pair of something or other" there appears to be gross underpayment. It is important to remember that the cost of housing is almost negligible, medical care is provided without cost, pensions and retirement are available at no direct expense to the individual and that provisions for the education of one's children are well taken care of. This means that many of the fixed costs which exist in our own culture are absent. Consequently, the true comparison should be in respect to *disposable income*. The balance is still distinctly in our own favor but not to the same extent as would appear at first glance.

This summer I expect to check on the ac-

curacy of Dr. Masserman's observations about Yugoslavia and in return extend my permission for him to visit Liberia, Nigeria, Afghanistan, *etc.*, so that we may subsequently compare notes. The peripatetic American psychiatrist fulfills a most useful function and this species should be encouraged.

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SCRUPULOSITY : RELIGION AND OBSESSIVE COMPULSIVE BEHAVIOR IN CHILDREN¹

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The term scrupulosity is not new and has both theological and psychological aspects. The term scruple is derived from the Latin word *scrupulus*, meaning a small, sharp pebble which when lodged in a shoe caused discomfort or interference with walking. Later on, the term came to mean a very small weight, about one twenty-fourth of an ounce, so small as to affect only the most sensitive balance. From this, the English word scruple came to acquire a moral meaning of a minute reason or motive—so slight as to affect only a very delicate conscience. In this sense it has the dictionary meaning of careful, exact, conscientious, and implies a good healthy meticulousness. In its technical sense (and as used in this paper) the term scruple means an unhealthy and morbid kind of meticulousness which hampers a person's religious adjustment.

Early spiritual writers looked upon continuous scrupulosity as a moral malady of the soul. The past and present theological attitude is that scrupulosity means fear and insecurity which tend to make an individual see evil where there is no evil, serious sin where there is no serious sin, and obligation where there is no obligation. Thus scrupulosity is not seen due to a lack of knowledge but to emotional factors. There is evidence of a disturbance of judgment in that the scrupulous person considers something as important which in reality is trifling and negligible. These result in endless consultations with many priests, a state of endless doubt, and involvement with trivialities, all of this together constituting in varying degree a pathological state.

Among the first to classify the scrupulous person from a psychological point of view was Janet(6). He saw scrupulosity as a manifestation of psychasthenia. Emyieu(4)

followed Janet's theories. Fenichel(5) or more recently Mahoney(7) explain scrupulosity as a result of deep unconscious conflict. They see the scrupulous person as a victim of an over-severe superego. He has the ambivalence associated with regression to an early stage of personality organization and uses the defense mechanism of reaction formation, isolation and undoing, which are characteristic of compulsion neurosis. There are other interpretations by Allers(1), Moore(10) and Mailloux(8).

There is a high incidence of scrupulosity among the Catholic population. In a recent survey by one of the authors(12) it was found that one of 4 sophomores in a Catholic high school admitted to current scrupulosity. One of every 7 Catholic college students admitted to current scrupulosity. There was no sex difference. It must, however, be pointed out that much of this scrupulosity is transitory and not necessarily indicative of severe pathology. The duration ranged anywhere from a few months to 4 years with the average duration somewhere between 1 and 2 years. The age of onset is scattered across the developmental period from early childhood to late adolescence with a marked increase in the frequency of onset during early puberty. Doyle(2), Mullen(11) and McGowan(9) seem to be in agreement with these findings. We might note Wittel's(3) reference to "a phase of the ambivalence in adolescence."

We report here 23 children referred to the St. Charles Child Guidance Clinic, Brooklyn,³ in the past 10 years because of continuous and chronic scrupulosity. The group consisted of 12 boys and 11 girls between the ages of 10 and 17; the mean age being 12 years and 9 months. Fourteen of these children were referred by priests and 6 by doctors. Thirteen were referred specifically for scrupulosity. Typical initial

¹Read at the 116th annual meeting of The American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

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³Much of the clinical material available for this research was due to the interest of the former Medical Director of St. Charles Child Guidance Clinic, Dr. Frank Cassino and the clinic staff.

referrals were : "A bad dose of scrupulosity." "Scruples—most acute anxiety." "Abnormally scrupulous." "Compulsive thoughts of killing mother and beginning of scruples." "Overly religious." "Very disturbed—concerned about right and wrong."

These children were all Roman Catholics whose families were together and practicing their religion. Their primary education was in the local parochial school. For the most part they were of better than average intelligence with IQs ranging from 100 to 135 with only 5 below 110. Scholastically they functioned as well as one would expect from their high intelligence (school averages in the 90's). Furthermore, they were considered exemplary students,* generally receiving A for conduct. Three were "only" children. Typical school reports were : "tops in his class," "fine scholastic record, energetic, splendid altar boy."

On initial referral their mothers were frequently very upset and some were in tears over their child's symptoms. Because of their own anxiety, many of the mothers tended to minimize the symptoms and emphasize the predominantly religious aspect, namely, the scrupulosity which they tended to view in a privileged way. This made it more difficult for some mothers to view it as an illness and consequently follow through on treatment. One of the mothers frequently was or had been scrupulous in the past. We have less information about the fathers, but they usually viewed the condition with less concern.

How did these children show their scrupulosity at the time they arrived at our clinic? Many presented problems concerning food such as : finicky eaters, food having lost its appeal, requiring permission to eat, and it being a sin to eat. Occasionally thumb sucking or hand chewing was in evidence. Breathing also had its problems such as : breathing is a sin, and breathing is stealing the air that doesn't belong to them. Coughing and spitting germs were sinful in terms of possibly killing someone. Another group of symptoms involved obsessive compulsive tics and rituals such as compulsive washing of hands, touching the walls or stepping on cracks, which was seen as a mortal sin. There seemed to be a problem concerning money and handling of posses-

sions. Moving and kicking furniture were sinful as property was destroyed. There was also fear of injuring someone, brushing against someone or killing someone. The sexual area also presented many problems for these children as they were concerned with impure thoughts and mixed parties which had kissing games. There seemed to be over-concern about bodily functions, problems with touching, and in some girls menstruation being equated with sinfulness. One girl felt compelled to take her bath with the light out. Television and other pictures, because of their sexual implications, also troubled some of these children. One penciled in low necklines seen in magazines. There was over-concern about modesty and their dress for fear they might be sexually seductive to others. One girl was concerned lest her parochial school uniform might be too sheer.

How did these children show their scrupulosity in specifically religious behavior? As practicing Catholics many of them not only attended church regularly but went to daily Mass. They were looked upon as good children and more religious than average. There were indecisions about right and wrong and fear of wrong in everything. They were continually consulting the priest and re-examining their conscience frequently throughout the day. The problem about Confession showed itself in various ways and was frequently quite dramatic. They felt past sins were either not properly confessed or were not properly understood by the priest. They were afraid they had omitted something and there were endless ruminations and repetitions of the same sin, and of all the trivial circumstances surrounding their actions, with inability to arrive at a satisfactory decision. Many found it difficult in going to Communion because of their inability to resolve their doubt about sin on their soul. In several cases among our boys it was found that there was much concern and fear about having sold their souls to the devil. One boy sold his soul to the devil so that the Dodgers would win. One girl went into a trance in church on the night she felt she had converted her non-Catholic grandfather because he finally accompanied her to church.

The precipitating event which triggered an acute phase of scrupulosity was an intense situation emotionally linked with their conflict. In our cases we found: A. The introduction of sexual material as, for example, the first mixed party or kissing game; learning about the processes of birth from a friend; seeing dirty words on a lavatory wall. B. Special religious events, such as the beginning of Lent or the making of their Easter Duty. C. A traumatic event such as sudden separation from the mother or mother substitute; or physical injury, or hearing a story about someone being possessed by a devil.

The personality picture of these scrupulous children as presented by the mothers appeared as follows: The children were usually seen as perfectionistic, being over-clean, always prim and fussy, extremely neat. They were also studious and too thorough, spending much time on their homework with a need to excel (which in fact they did). One youngster was described as: "Prays, works and studies intensely for long periods of time." Others were described as being "too good," "always a good child" and "requires little correction." They were described as shy, oversensitive, serious, nervous with a tendency to worry, and depressed. Socially they adjusted poorly and seldom had close friends and thus appeared as withdrawn, seclusive and lonely. The mothers felt that their children were overattached, needed their approval for being good and made them their chief confidantes. However, remarks from the mother on sex and sin were disturbing to them. The mother's feelings and her health also concerned them. In brief, there was very close mother-child relationship and what frequently appeared to be overprotection on the mother's part which resulted in a dependent relationship.

In general, in the eyes of the mother, early developmental history did not seem to deviate too much from the normal. In a few cases there was mention of early operations or rheumatic fever or a kidney infection. Several had asthma, all of which seemed to focus the mother's attention more on the child than on the other siblings. One youngster sucked his thumb until the age of 6, then bit his nails and then began to pull his

hair and then finally, when reprimanded, crossed his eyes and walked into the wall. Unfortunately, information on toilet training was scant. It was seldom specifically mentioned as being difficult. In general, their early behavior was seldom mentioned as a problem.

The personality picture as derived from psychological testing may be summarized as showing much immaturity and dependency. The youngsters appeared introverted, fearful, sensitive, anxious, critical and perfectionistic. They were frequently guarded, evasive and cautious. There was a preponderance of obsessive compulsive traits, lack of spontaneity, and there were indications of rigidity and constricted functioning. Ambivalence and seeking inner controls of emotions were also in evidence. Chronic and acute doubting appeared. Sexual preoccupation, sexual conflict and guilt were strongly indicated. In many there was poor self identity.

Initial psychiatric interviews gave further confirmation of their personalities as described above. In all, 18 psychiatric interviews were available. Nine of these scrupulous children were seen as having an underlying schizophrenic matrix or functioning on a pre-psychotic level.

These children presented a chronic and severe form of scrupulosity. Although the content of their productions was of a religious and spiritual nature, the problem was basically not a moral, but an emotional one. The core problem was in the handling of both sexual and aggressive impulses, and we see the symptoms on all levels of psychosexual development. The aggressive impulses seemed to produce the most difficulty. Much aggression was present but went unrecognized by others and more especially by themselves. The competitive theme was very strong with need to excel, and much sibling rivalry. They were frequently manipulative, passively resistive and provocative. Their sexual conflict had oedipal overtones. Coupled with this was profound and incapacitating ambivalence (mixed feelings) and excessive guilt. They tended to use intellectual defenses at the expense of their emotional development. The defenses met with were the ones common to the obsessive compulsive syndrome:

reaction formation, doing and undoing, denial and isolation. In short, the ego is caught between the forces of the id and superego. In these children their normal healthy drives and inhibitions became exaggerated and out of proportion, and their behavior thus appeared irrational and frequently bizarre and ineffectual. Although not stressed by the mothers, there frequently seemed to be a depressive element with weeping and crying.

Seven boys and 4 girls received treatment at the clinic, generally for one year. However, several children are currently in their second year of treatment. The 4 girls showed improvement as did 4 of the 7 boys. Of the other 3 boys, one showed uncertain improvement with poor prognostic expectations at the end of treatment. Another schizophrenic boy had to be hospitalized and the third boy, seen on periodic consultation over a number of years, remained unchanged. Treatment was usually on a supportive level. Their defenses were seldom, if ever, directly attacked. Much of the progress in therapy was due to the relationship established and the scrupulosity itself did not become much of an issue in their treatment. Medication: Thorazine, Compazine or Miltown, was occasionally used to tide them over their acute episode. However, initial psychotic episode, if any, was short lived and quickly dropped. They were usually able to wall off this episode.

From treatment as well as follow-up studies we see that the children were usually able to continue to function and make a fairly adequate adjustment. The recent follow-up study in which 17 of the scrupulous children were contacted, showed that they continued in high school or have graduated. Six are presently in college, and most of them continue to function on a better than average academic level. Two of the girls are married and one boy has just returned from 2 years in the army. Of 4 girls, one is a stenographer, one a typist, one an accountant and one a bookkeeper. The mothers of these youngsters still have difficulty in seeing their children's scrupulosity as an emotional problem. Many of these children still have difficulty in making a comfortable social adjustment.

SUMMARY

In this paper, a clearer picture of severe chronic scrupulosity as a pathological condition is presented. Children actually referred to a child guidance clinic for their scrupulosity are seriously disturbed. What became clear to us was that the scrupulous children presented a consistent picture in terms of symptoms and underlying personality traits. It usually appears as an obsessive compulsive disturbance involving fears and doubts. However, the constriction and inhibitions of these scrupulous children were frequently indicative of a schizoid personality and, in some instances, of an underlying schizophrenic matrix. This consistent picture of the scrupulous child which emerged from our research, enabled us to obtain a more immediate and fuller understanding of any new child referred to our clinic for his scrupulosity, and to work with the scrupulous child in a more confident and effective manner.

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ADJUSTMENT OF EIGHTY DISCHARGED GERIATRIC-PSYCHIATRIC PATIENTS¹

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It is felt by professional workers in medicine, psychology, nursing, social work and rehabilitation, that older patients encumbered with severe physical and psychiatric illnesses, as are many of the chronic patients in the Veterans Administration Hospitals, have little chance of returning to family and community living, *unless they are provided with the appropriate professional assistance, carefully prepared, and consistently helped to adapt themselves to some form of community living.*

The validity of the belief that chronically ill, geriatric-psychiatric patients, receiving appropriate assistance could make satisfactory and satisfying adjustments outside an institutional setting was subjected to critical analysis in this study.

At the VA Hospital, Sepulveda, California, a 100-bed geriatric-psychiatric service has been in operation since 1955. Initially the staff, because of the complexity of their patients' problems, had many reservations concerning the ability of these long-term geriatric-psychiatric patients to adjust to settings other than chronic hospitals. In November, 1957, the treatment program was intensified and increased emphases were placed on more active therapeutic and rehabilitation techniques. Eighty patients were discharged. The follow-up study concerns these 80 patients.

GROUP CHARACTERISTICS

All were males, veterans, and formerly patients in the above geriatric-psychiatric service.

Age: The age range for the group discharged was 26-82 years; the mean age was 62.3 years.

Race: The discharged group was 99% white and 1% non-white; the remaining group was 95% white and 5% non-white.

Marital Status: Marital status percent-

ages of the discharged and remaining groups showed one significant difference at the .01 level of confidence: a larger number of divorced men were in the discharged group than in the remaining group.

Number of Diagnoses: The mean number of diagnoses of the remaining group was 2.4: that of the group of discharged patients was 2.0.

Diagnoses: Of the discharged patients, 85% carried a diagnosis of "psychosis"; 35% had "chronic brain syndrome"; 13% were considered "incompetent"; 11% had "cardiovascular disease"; 8% "pulmonary disease." The remaining group had significantly larger percentages of patients with "chronic brain syndrome"; "cardiovascular disease" and "tuberculosis-inactive."

Time in Hospital: The discharged group had spent an average of 21.7 months in the hospital as compared with 26.3 months for the remaining group. The majority of these patients had been hospitalized elsewhere prior to admittance to this hospital. For example, of the 22 patients who had accepted family care placement in this study, 14 had been hospitalized over 10 years. Of this group, 9 had been hospitalized over 20 years; while 4 had been hospitalized over 30 years.

Number of Discharges: The mean number of discharges in the remaining group was .1; that of the discharged group had been 2.0. *Thus the discharged group had received 20 times the number of discharges which the remaining group had received.* It is, of course, obvious that the men in the remaining group were much sicker than those in the discharged group, nevertheless the question arises: Could more discharges have been provided the remaining group, thus exploring the feasibility of living outside the hospital?

Death rate: A comparison was made of the death rate of the 2 groups. The death rate of the discharged group over a period of 44 months was 8%; the hospitalized group had a death rate of 18% over a 39

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month period. Converted to death rate per month this would be .18% of the discharged group and .46% of the remaining group per month.

Number of Places Lived in Since Discharge: Of 67 returns, 43 discharged patients or 66% remained in the original home developed through hospital discharge planning. Thus a large percentage of the total discharge group of 80 patients—at least 53%—adhered closely to the discharge plan developed in the hospital.

Sources of Income: Fifty-three patients indicated definite sources of income. Only 5 questionnaires indicated no source of income. These data show that a large percentage of discharged patients had economic resources available. In a few cases, income was sufficient for full maintenance costs.

Average Monthly Income: Forty-seven returned questionnaires presented the monthly income of discharged patients. The mean monthly income for this group was \$155.00.

Adjustment to Present Living Situation: Ratings were made by the interviewers of adjustments made to patient's present living situation. The scale used included 4 ratings: poor, fair, good, and excellent. Based on a point system of 1-2-3-4, the mean rating for this group was 2.3 closer to "fair" than "good."

Adjustment to Present State of Health: The mean point evaluation was 2.7, somewhat closer to the "good" rating than to the "fair" rating.

Is Patient Receiving Outpatient Medical Care? "Yes" responses to this question was 26%, "No" responses was 74%. When hospital staff was queried regarding the percentage of patients discharged from the geriatric-psychiatric service who would require medical services after discharge, responses ran from 70% to 95%. The finding that only 26% were receiving medical treatment was surprising to nearly all staff members.

Adjustment to Work or Hobbies: The mean point rating was 2.3, closer to "fair" than to the "good" rating.

Is Patient Working? Responses were "Yes" for 33%. It was surprising to find that one-third of these discharged patients were

working, since it was the belief of most hospital staff members that not more than 10% could or would return to work, even to marginal types of work. Not all of those working were receiving wages. It is believed that at least 8 of the 16 working were being paid.

Since the average number of hours worked by each working patient was 19.5 or 975 hours for a 50 week year, it is estimated that a working patient earning the federal minimum wage of \$1.00 per hour, would earn \$975.00 per year. The group of 16 working patients then would earn \$15,600. Since only about 50% of the working group is being paid, the group is earning approximately a minimum of \$7,500 per year.

If Working—what does he do? The 16 discharged patients were engaged in 11 different jobs. In this group were 4 men who worked 8 hours per day, 5 days a week. These findings are very encouraging and point to potentialities within men who present complex geriatric-psychiatric histories.

Adjustment to Social Activities: The mean rating was 2.3, closer to "fair" than to "good."

In Your Opinion Does This Patient Need Hospitalization at This Time? Ninety-three percent answered "No" and 7% answered "Yes." This finding indicates that adequate hospital services had been provided to these discharged patients. It also suggests that living outside a hospital has salutary effects.

What Additional Services Would Improve or Stabilize This Veteran's Adjustments? On the 31 questionnaires which dealt with this question, there were 41 responses. The largest single response—12 or 29%—was "None."

How Long Do You Believe Patient Will Remain Out of Hospital? Eighty-two percent stated patients would remain out of the hospital "Indefinitely."

What Might the Veterans Administration Hospital at Sepulveda Have Done to Make This Patient Better Able to Remain Out of Hospitals? The largest number of responses—23 or 63%—answered "Nothing."

DISCUSSION

A significantly greater percentage of divorced men were included in the discharge group. It is heartening to note that in this group, 6 were over the age of 70 years, and 2 were in their 80's. Approximately 60% were living in protected settings and receiving continued supportive case work help by the hospital or Regional Office social workers.

The discharged group had a mean of 2.0 medical diagnoses. Of these, 85% had been diagnosed as "psychotic" and 35% with "chronic brain syndrome." Being psychotic does not significantly affect hospital discharge. However, brain damage does significantly reduce the possibility of leaving a hospital. The group remaining had approximately twice the incidence of brain damage of the discharged group. There appears to be evidence that cardiovascular disease and tuberculosis (inactive) reduce the chances of leaving a geriatric-psychiatric service. The combination of brain damage, cardiovascular disease, and tuberculosis (inactive) suggests that the older patients who require considerable physical attention have fewer chances of making acceptable adjustments outside the hospital than do patients with minimum physical needs but with psychoses. In further support of this observation, experience in this hospital shows that the geriatric-psychiatric patient returns to the hospital in the majority of cases for medical reasons rather than for psychiatric conditions, even though he may have been originally hospitalized for psychiatric reasons.

A psychotic patient who can provide self-care is much more acceptable to his family or other families than is the non-psychotic who needs personal physical attention. This conclusion is strengthened by noting that even the classification of a patient as "Incompetent" does not affect discharge possibilities: 15% of the remaining patients were considered as incompetent against 13% of discharged patients.

The discharged group had an average of 4.6 months less hospital time than did the remaining group.

On the average, the discharged group had received 2.0 discharges, while the remaining group had received .1 discharges, and 88%

of the remaining group never had received a discharge. The subject of hospital discharges calls for further research. It is highly desirable to explore intensively new approaches to discharges and different kinds of discharges, particularly for patients who require limited physical care.

Greater community involvement in the treatment of geriatric-psychiatric patients is needed so that more of these patients have opportunities for leaving the hospital, even for short periods, to meet with non-patient groups, and engage in community activities whenever possible.

An analysis of the death rate was made to determine if there was justification for the beliefs of some that exposure of these geriatric-psychiatric patients to the outside world would prove dangerous. The 8% death rate for the discharged patients as against the 18% death rate of remaining patients *per se* indicates that being discharged does not increase the incidence of death.

One of the several encouraging findings was the movement of these discharged patients into 30 different communities. Sixty-three percent of the discharged patients settled in the Los Angeles or San Fernando Valley, within close reach of the hospital.

About one-third of the discharged group was living with its immediate family, while over one-third was living with foster families. Thus over two-thirds of the discharged group had returned to family settings, rather than to institutional settings or to living by themselves. For most of these patients a return to a family setting was a realistic goal.

Another encouraging finding was the stability of the discharge plans developed within the hospital setting. Of the 67 returned questionnaires with data regarding the number of places lived in since hospital discharge, 44 or 66% indicated no moves had been made and the discharged patient was living in the home or setting developed with him while he was hospitalized. This finding points to the importance of the social worker in laying the groundwork for realistic discharge plans with responsible family members and the patient.

Perhaps the most unexpected findings were those dealing with health, medical

care, and the need for hospitalization. The greatest amount of concern and uncertainty on the part of the staff existed in these areas. The findings of this study, however, point clearly to the ability of these discharged patients to maintain their well-being and even reduce the amount of medical services they once had required.

Only 26% was receiving outpatient medical care. Only 7% seemed to be in need of further hospitalization at the time of the interview.

Considering the type of patients composing the discharge group, it is encouraging to discover their ability to maintain themselves relatively free of direct medical or hospital service. The conventional belief is that geriatric-psychiatric patients require long-time and extensive medical-psychiatric attention. Because of this belief, movement of such hospitalized patients often is retarded by excessive concern over discharge planning, and resistance to moving them. In many cases, the potentialities of such patients are grossly minimized or completely disregarded.

It is well-known that the geriatric-psychiatric patient, after long-term hospitalization, develops strong resistances to change or movement; this is especially true when he is faced with leaving the protected environment of the hospital to return to community living, which he often looks upon with doubts and fears. Careful discharge

planning, which includes the patient at each step of the way, enables the patient to accept, often on a trial period, living outside the hospital.

Experience points out that the chronic patient who has had an opportunity to live outside the hospital, even for a short period, has a better chance for developing and carrying out sound discharge plans which will keep him out of a chronic hospital than has the patient who has never made such an attempt.

In view of the above findings, resistance to the movement of geriatric-psychiatric patients from a hospital setting to a home or community setting, in many instances seems to be unwarranted, and actually anti-therapeutic. Where limited movement of patients exists, a definite need for greater effort in the development of realistic discharge plans seems indicated. Limited movement of patients often suggests that staff members are in need of training and clarification of treatment objectives.

In brief, these findings indicate that the discharged group of geriatric-psychiatric patients was happier, healthier, more productive, more gainfully employed, and more active socially than when hospitalized. Life outside the hospital stimulated these men to live fuller lives and reduced their medical needs. Life outside a hospital appears not to have increased the death rate for this group.

SOME PSYCHOLOGICAL ASPECTS OF ISOLATED ANTARCTIC LIVING¹

CAPTAIN CHARLES S. MULLIN JR., (M.C.), U.S.N.²

When Byrd went to the Antarctic in the twenties he is said to have taken along, in addition to two coffins, an even dozen strait jackets. This pessimistic precaution turned out to have been unnecessary, but does suggest the respect that even experienced explorers have had for the psychological vicissitudes of isolated polar living. To be sure, conditions at isolated United States I.G.Y. Stations in the Antarctic are different from the time of the early explorers. There is less danger and hardship, better communication with the outside world, and (possibly) better selection of personnel. (At least there is more psychological professionalism applied to the problem of selection today.) Nonetheless, for most individuals the business of living for a year in an isolated polar station still makes serious demands on adaptive resources.

Here is the situation. A small (12 to 40) group of volunteers of widely varying interests and backgrounds (scientists, officers, and enlisted personnel) are thrown together in close personal association and isolated from all other society for a large part of a year. Most of life is lived indoors except for the lucky few who may go out on "traverses." For 7 or 8 months of the year, there is no communication with the outside world except by radio, and for several months of the winter there is 24 hours of darkness. During this time the physical milieu, the routine of life, and the small exclusive society is, of course, characterized by an inevitable sameness and monotony.

There is much interest these days in the psychological effects of isolation, in part perhaps, because of current fantasies about space travel and planetary exploration. Accordingly, this review of effects of voluntary

isolated group living, in a non-experimental situation, may be of interest.

The present study was based on interviews conducted "on the ice" with some 85 personnel who were nearing the end of their wintering-over period at a number of smaller, more isolated stations. The interviews were conducted by 2 psychiatrists and 2 psychologists, during two visits to the Antarctic on successive years. The interviews lasted from one to several hours, and in many instances the subjects were interviewed separately by two members of the team. The goodwill and frankness of the interviewees was impressive. In some instances there was a mild initial xenophobia, but this was invariably quickly replaced by a spirited degree of cooperativeness that in many cases suggested a compulsive eagerness to communicate.

OBSERVATIONS

1. *Danger, Hardship and Cold.* Danger, hardship, or the direct effects of cold did not represent important stresses. Indeed, the absence of much hardship and danger, and the relative luxury of living conditions, were sources of considerable disappointment and disillusionment for many of the younger and more romantically inclined members.

2. *The Main Stresses.* The major stresses appeared to be: (a) The problem of individual adjustment to the group, (b) the relative "sameness" of the milieu, and (c) the absence of many accustomed sources of emotional gratification. Undoubtedly, it was the interaction of these stresses that produced the effects observed: but, in the production of a given effect, one of these classes of stress might be more determinant than another.

3. *Hostility.* We were impressed by the relative absence of overtly expressed hostility. At most of the smaller stations visited, fights and angry arguments were remarkably rare, considering the conditions of living described above. Group and individual tensions and irritations are ever pres-

¹ Read at the 116th annual meeting of The American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

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ent, but the most important lesson a wintering-over man learns is that he cannot afford to alienate the group; that in this tight little society he is dependent in large measure upon the goodwill of the next man and of the group as a whole for his vital feelings of security, worth and acceptance.

4. *Headaches.* Probably related to this phenomenon of controlled aggression was the rather extraordinary frequency of headaches, since it is generally assumed that there is often a relationship between "inadequately" expressed hostility and the occurrence of headaches, and since no primarily physical cause could be ascribed. It was interesting that these headaches seemed to affect the officer-civilian group more than the enlisted contingent. The enlisted men had various ways, acceptable to the group, for expressing their hostile-tensions, for example: vigorous horseplay; loud complaining without too much rancor; swearing; and an interesting technique of exchanging insults, often quite personal and to the point, but rarely reacted to with much, if any, anger, as if there were a tacit mutual recognition of the function of the exchange. The more sophisticated officer-scientist group were both more limited in the effective techniques available and were perhaps under a greater self-imposed necessity for careful control of their aggression; hence their preponderance for headaches.

5. *Insomnia.* Varying degrees of sleeplessness was a fairly wide-spread phenomenon, but confined almost exclusively to the dark winter season, rather than to the summer period of 24 hour brightness. It affected men who had never before had difficulty in sleeping. At one small New Zealand Station, everyone in camp was a member of the "Big Eye" Club. The only qualification for membership was insomnia. The rules of the club were simple. You were expected to retire, but if efforts to sleep were unsuccessful, you could then join the club session in the common room, sitting about reading, chatting, playing cards until you felt sufficiently tired to try the sack again. The causes of the "Big Eye" (the term widely used in the Antarctic for the insomnia problem) are not entirely clear, but seem related to such factors as the ac-

cumulation of group and personal tensions, the reduced physical activity of the dark winter period, and group suggestibility. Some men commented that although they felt tired, even exhausted, at the same time they felt restless and unrelaxed when they endeavored to find sleep. Several researchers (1, 2) have observed that a more or less intense desire for stimuli and action is an effect of the experimental isolation experience. Perhaps a conflict between a desire to sleep and a need for action has some bearing on the "Big Eye" problem.

6. *Intellectual Inertia.* There was a curious and widespread lack of intellectual energy which was manifested most severely during the months of winter, i.e., after several months of isolation. The majority of personnel had come to the Antarctic planning to carry out certain "extra-curricular" projects. The intention might be to learn a language, do some "serious" reading, accomplish batches of correspondence courses, write articles, learn to play a musical instrument, etc. Rarely were the original plans realized; and, in the majority of instances, although there was plenty of time available, very little was done in the direction of even making a good start on the project. Although reading was a fairly widespread spare time occupation, usually the class of reading done was of a "lower" order than that characteristic of the individual's usual interests and taste.

7. *Impaired Memory and Concentration.* Akin to the phenomenon of intellectual inertia was the finding of impaired memory, alertness and concentration. This was again manifested most obviously during the winter. Many were not appreciably affected, but at one isolated station this impairment of memory and mental acuity affected about one-third of the camp in varying degree, from unwonted absentmindedness to the occurrence of mild fugue states. Impairment of mental acuity and the capacity for sustained mental effort has been noted by many observers in isolation experiments in the laboratory (1, 2). It is probable that the intellectual anergia and impaired alertness reported here bear some relationship to the factor of prolonged exposure to "sameness"—the same few faces and personalities, the same limited physical milieu, the same rela-

tively simple routine of life—plus a long period of limited physical activity and mobility; or, in short, the effect of the reduction in the amount and variety of meaningful sensory stimulation over a prolonged period of time.

8. *Appetite.* As might be expected, "oral" needs were enhanced, presumably because of tensions that could not be readily expressed, and because of the absence of other basic gratifications. Appetite and consumption were enormous, and weight gains of 20 or 30 pounds during the year were not unusual. When the cook was adequate to the challenge, his prestige was of course enormous.

9. *Sexual.* It is axiomatic that no area of human functioning is more subject to distorted reporting, exaggeration, suppression and repression than the area of sex, and the following observations are based, of course, largely on what we were told by the men. However, it appears that these generalizations may have some validity. Isolation from women was not, in itself, a serious problem; or, more accurately, was not a matter of conscious yearning, erotic or otherwise, except perhaps for a very few individuals very early and very late in the year, or in a few instances during periods of personal emotional stress. With respect to sex dreams, nocturnal emissions and masturbatory activity, the following impressions were gained: (a) There was a slight general tendency to increased frequency; (b) this increased frequency was more apparent during periods of relative inactivity and personal emotional stress, and towards the end of the tour (the question of reawakened fantasies). With respect to evidences of inversion trends, there were no indications of any overt homosexual practices, scandal, or gossip, although, as might be expected, there were indications here and there of mild covert manifestations throughout the group. For one thing, privacy was at a premium. But, perhaps more importantly, the "risk" to the vital need for group acceptance was too great.

10. *The Absence of Usual Sources of Emotional Gratification.* For the group as a

whole, nostalgia was not a problem, as a felt experience; and separation from home, wife, family, and familiar situations of the man's personal "civilization" was rarely a subject of any serious continuing preoccupation. However, most agreed that the absence of these supportive influences increased the burden of their adaptation. As already indicated, the evidence suggested that sexuality was repressed and substitutive oral satisfactions were ascendent. On the other hand, for a few men it was obvious that separation from home, wife, children, and family responsibility, meant for them the subtraction of an element of stress in their personal adjustment.

11. *"Long-Term" Effects of the Experience.* A few "old salts" and a few scientists who had previous isolation experience felt that they had experienced no great changes within themselves. However, the majority felt that something good had happened to them that they hoped and believed would endure. This was expressed in various ways, as for example, more self-discipline, greater adaptability, more tolerance, more patience, more understanding of self, and more understanding of the other man. However, not one man interviewed was unambiguously desirous of repeating the experience.

SUMMARY AND CONCLUSIONS

Some psychological effects of isolated group living in the Antarctic are described. It would appear that the cold, danger, and hardship are not major stresses. The most important psychological stresses appear to be: First, the problem of individual adjustment to the group; second, and more subtly acting, the relative "sameness" of the milieu; and third, the absence of certain accustomed sources of emotional satisfaction.

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BRIEF OBJECTIVE MEASURES FOR THE DETERMINATION OF MENTAL STATUS IN THE AGED¹

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In the process of conducting a survey of institutionalized aged persons for the Office of the Consultant on Services for the Aged,³ it became evident that the problem of mental disorder in this population was related to organic brain damage. For this reason, it was considered desirable to develop brief, objective, and quantitative measures of mental functioning related to cerebral impairment. The purpose of this paper is: 1. To describe the procedures that were utilized, 2. To explain their rationale, 3. To show the results obtained to date, with particular reference to their validity, and 4. To indicate the potential further usefulness of these procedures.

METHOD

Two psychological tests were used in this study, the mental status questionnaire (MSQ) and the face-hand test.

The Mental Status Questionnaire: This consisted of a series of 31 questions covering such areas as orientation, memory, calculation, and general and personal information. These questions were drawn partly from standard mental status examination procedures, and partly from recent special investigations of patterns of altered behavior with cerebral dysfunction(1).

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³ Sampling procedures for the survey were planned and supervised by Julius A. Jahn, Ph.D. Research activities were coordinated by Helen Turner, M.S., with the assistance of Syra Cohen, B.S. The psychiatric examinations were done by Kenneth Altshuler, M.D., Morton Aronson, M.D., Martin Barad, M.D., Arthur Peck, M.D., Vincent Squilla, M.D., and Robert Shapiro, M.D. Physical examinations were made by and under the direction of Isadore E. Gerber, M.D. The epidemiological aspects of the study were coordinated by Israel Gitlitz, M.D. We are grateful to the hospitals and the homes who participated in our survey and who made our studies possible.

From the total questionnaire, 10 items were selected as the most discriminating and used for the quantitative determination of mental status. These items were: 1. What is the name of this place? 2. Where is it located (address)? 3. What is today's date? 4. What is the month now? 5. What is the year? 6. How old are you? 7. When were you born (month)? 8. When were you born (year)? 9. Who is the president of the United States? 10. Who was the president before him?

While these questions themselves are familiar enough, our procedure insured that the same questions, worded in the identical fashion, would be asked of everybody. Secondly, by obtaining a score based on the number of errors in response to these 10 questions, a quantitative index of mental functioning was provided.

The Face-Hand Test: This test was first described by Fink, Green and Bender(2) as a diagnostic procedure for brain damage. The test consists of touching the patient simultaneously on the cheek and on the dorsum of the hand, and asking him to indicate where he was touched. Ten trials are given: 8 face-hand combinations divided between 4 contralateral (e.g., right cheek and left hand) and 4 ipsilateral (e.g., right cheek and right hand) stimuli, and 2 interspersed symmetric combinations of face-face and hand-hand. After the second trial, if the patient only reports one stimulus, he is asked, "Were you touched anywhere else?" in order to give him the concept of twoness. If the patient fails consistently to locate both stimuli correctly within the 10 trials, he is classed as positive. The main types of errors are extinction, in which only 1 stimulus is indicated (almost always the face), and displacement, in which 2 stimuli are indicated but 1 of them, generally the hand stimulus, is displaced to another part of the body (e.g., if the person indicates both cheeks when the face and hand were actually touched). A patient is

rated negative if he is consistently correct within the 10 trials. Frequently he makes an error on the first 4 trials, but is consistently correct after perceiving the 2 symmetric stimuli.

The face-hand test was first given with the eyes closed and then, if the individual showed a positive reaction, was repeated with the eyes open. Since it was found that in about 90% of the cases the response under the two conditions was identical, the response with eyes open has been used in our analysis of data.

The face-hand test was considered a desirable procedure for this survey, not only because of its established value as a test for cerebral dysfunction, but also because it is relatively "culture free," being an unlearned perceptual task. It has the further advantage of being usable with patients who don't speak English very well or present some other problem in verbal communication.

POPULATION

The population sampled consisted of 1,077 patients residing in homes for the aged, nursing homes and state mental hospitals located in New York City. The individuals included were those who were 65 years of age or over at the time of first admission to the institution, and in residence as of a given month during the survey period of March to November, 1958.

Both the institutions chosen for study and the persons tested within each institution were selected by random sampling. All 3 state hospitals in New York City were sampled, with a total of 169 patients examined. Of the 102 proprietary nursing homes registered by the Department of Hospitals in January, 1956, samples were drawn from 13 and 426 persons examined. Nine of the 49 homes for the aged listed by the Community Council of New York City in 1957 were sampled, with 482 residents examined.

PSYCHIATRIC EXAMINATION

Each person was also examined by a psychiatrist within a 1 month period of the psychological examination. The psychiatrist, on the basis of a conventional psychiatric interview, assessed each person for the

presence and degree of chronic brain syndrome, the presence or absence of psychosis associated with chronic brain syndrome, the presence of other types of psychiatric disorders, the degree of management problem, and whether or not the person was certifiable.

RESULTS

1. *Chronic Brain Syndrome.* There was a marked relationship between the psychiatrists' evaluations of the presence and degree of chronic brain syndrome and the results of the two psychological procedures.⁴ Ninety-four percent of those making no MSQ errors were rated as having none or mild chronic brain syndrome. In contrast, of those with 10 MSQ errors, only 5% were rated as none or mild, and 95% were considered to have moderate or severe CBS. Between these two extremes there was a linear progression, with increasing number of errors associated with more severe CBS rating.

The results are similar for the face-hand test. Seventy percent of those negative on this test were rated as none or mild CBS; a similar rating was given to only 27% of those who were positive.

2. *CBS with Psychosis and Certifiability.* There was a relationship between the psychiatrists' ratings of psychosis in association with CBS and of certifiability to the psychological tests. Of those making no MSQ errors only 3% were rated as CBS with psychosis, in contrast to 75% of those making ten errors.

The certifiability ratings follow the same pattern, with 5% of those with no errors evaluated as certifiable, with a gradual increase with increasing error scores until of those with 10 errors 89% were so rated.

A similar relationship was shown with the face-hand data. Of those who were negative on this procedure, only 13% were rated as CBS with psychosis and 21% as certifiable. Of the patients who had positive face-hand responses, 50% were considered to have CBS with psychosis and 65% certifiable.

3. *Management Problem.* In their evaluations, the psychiatrists included a rating of degree of management problem, none, mild, moderate or severe. Although a large ma-

⁴ Tables and further data may be obtained from the authors on request.

jority of the patients were rated as none or mild, a relationship was still noted between the MSQ and face-hand test results to the management rating. Of those patients with no MSQ errors, 94% were rated as none or mild management problems. This figure declines with increasing error score, until with a maximum of 10 errors only 52% were so rated, with 48% considered to be moderate or severe problems. On the face-hand test, 67% of those with positive response were rated as no or mild management problems, compared to 83% of those with negative results.

DISCUSSION

These results have shown that the mental status questionnaire and the face-hand test are highly related to psychiatrists' evaluations of the presence and degree of chronic brain syndrome, the presence of psychosis associated with chronic brain syndrome, the certifiability status of the patient, and the degree of management problem.

In a sense, these results establish the validity of the psychological procedures as measures of mental status, using the psychiatrists' ratings as the validating criteria. But it is necessary to keep in mind that the psychiatrists' ratings are more subjective, and with considerable variation in the ratings of different psychiatrists examining similar populations. The 2 psychological procedures, in contrast, provide an objective basis for uniformity of observation and evaluation by different observers.

While there is no doubt that other objective or standardized tests could be adapted or devised which would also be correlated with psychiatric evaluations, the MSQ and face-hand test have the advantage of requiring little time for administration. The brevity and objectivity of these tests also make them desirable procedures for rapid clinical screening and for research purposes. For example, we have already reported a relationship between physical functional status and mental status, using either the face-hand test or the MSQ as the index of mental functioning(3). In another investigation under way of prognostic factors in the institutionalized aged, it has been found that performance on both of these procedures is significantly cor-

related with mortality within a 1 year follow-up period.

We would also like to point out certain limitations of these procedures. They are most useful for eliciting mental change associated with chronic brain syndrome, but are very limited in picking up other kinds of psychiatric disorders. Secondly, the tests measure the behavioral pattern at the time of testing and thus may fail to show impairment in patients with fluctuating mental status.

SUMMARY AND CONCLUSIONS

1. Data are presented on a random sample of 1,077 persons residing in homes for the aged, nursing homes and state hospitals in New York City, who were 65 years of age or over at the time of first admission. Each person was examined by a psychiatrist using a standard interview technique, and by a psychologist who administered two brief tests: the face-hand test, and a 10-item questionnaire testing orientation and recall of personal and general information.

2. The results of both tests were highly related to psychiatrists' clinical evaluations of the presence and degree of chronic brain syndrome, the presence or absence of psychosis associated with chronic brain syndrome, opinion as to certifiability, and degree of management problem.

3. It is concluded that the face-hand test and the mental status questionnaire are valid measures for the determination of mental status in the aged, particularly for disorders associated with cerebral damage.

4. These tests are considered to have a considerable potential clinical usefulness for rapid screening purposes. They provide an objective basis for uniformity of observation and evaluation by different observers. The brevity and objectivity of these tests make them desirable procedures for research purposes.

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PRESENT DAY CONCEPTS IN NURSING SERVICE ADMINISTRATION IN HOSPITALS FOR THE MENTALLY ILL¹

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Ever since that forgotten day, probably in the Old Stone Age, when some sick or injured friend was made comfortable, fed and protected while he recovered, the practice of nursing has attracted attention. It has grown from a simple individualistic endeavor into a highly complex and technical profession. With the revolutionary changes in mental hospital practice in the last decade or two, much more is being expected of nursing than ever before. Furthermore, despite a substantial increase in nursing personnel in the last 10 years, most of our mental hospitals are still far below the minimum standards of the American Psychiatric Association (10, 13). It is evident that we do not now have, and will not have in the discernable future, enough people in our hospitals to do our job properly, if traditional methods and practices continue. It is imperative, therefore, that we utilize the personnel we have much more fully and efficiently than we have been doing. It is because of a conviction that administrative organization and practices can contribute to this end that this paper is being presented.

THE NATURE AND PURPOSE OF ADMINISTRATION

To some professional persons, administration is viewed as something apart from professional practice, something a little less worthy of one's time and attention, something to rebel against and resist (3). This should not be. Administration properly understood, is an extension of our professional arms. It has been defined as "the integrating factor in group effort," (4) as "the marshalling of resources to accomplish a purpose" (1). With special application to

nursing service, it could be described as "a co-ordinated system of activities which provides all facilities necessary for the rendering of nursing care to patients" (1). With the modern American genius for division of labor and for organization, it is not surprising that in recent years a vast amount of time and attention has been spent on the problem of administration.

A recent report, in speaking of hospital administration, states that it

Demands a recognition of the human element and an awareness and appreciation of the attitudes, motivations and incentives in other people . . . a leadership skill in persuasion and adjustment which maintains control while permitting and encouraging individual expression and participation (4).

This description is not peculiar to the hospital administrator but applies with equal force to the nursing administrator. The nurse, by virtue of her position, is in between the patient, the physician, the public and other personnel and must perform many functions with an independent skill on demand by others who set the time and place and indicate the objectives.

It has been said that the philosophy and practices in any mental hospital reflect the personality and attitude of the superintendent. The selection, indoctrination and training of the staff and key personnel give the superintendent the opportunity to build an organization sympathetic toward his own ideas (3). However, the day of the "one man show" is rapidly disappearing. The administrator must still make the decisions, but modern concepts have made it important for all personnel to have an opportunity to participate in the formulation and statement of the philosophy, objectives and standard practices, and to advise on execution and action.

The Superintendent of Nurses in turn sets the climate through which nursing personnel will either be "people-centered" or will be "self-centered." The methods used in

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getting things done through people are the responsibility of the Superintendent of Nurses. In the process of organizing, the contribution of each member is properly identified and defined in terms of functions(5,7,8). Organizational planning is a distinct component of management, but once accomplished should not be regarded as fixed or final. If we stay "people-minded," new responsibility, changing work loads and new therapeutic programs in medicine have implications for nursing which may affect even the basic organizational structure. No amount of budget, additional equipment and supplies, procedural changes or personnel can completely offset faulty organization.

The administrator of nursing service must have faith and confidence in the nursing personnel through whose development nursing will improve(9). Problems are solved through consultation with the workers concerned rather than by the issuance of mandates. The persons to be affected are given the opportunity to participate in formulating plans. This technique facilitates change, has a maturing effect on human relations and is a motivating influence for all personnel toward an efficient and enthusiastic accomplishment of their jobs.

The nurse administrator must be willing and able to delegate authority to the appropriate level, to grant the right to plan and act without interference. This does not mean giving up control. Controlling is made up of two elements, organizational structure and supervision. Controlling requires good supervision but not necessarily centralization of authority. It most certainly requires proper delegation of authority and assignment of responsibility. It includes sound organization structure; which makes it possible for groups to work together as effectively as the individuals would work alone.

To restructure the administrative organization from the traditional to the creative and permissive type requires time, tolerance and confidence. It requires remotivation, re-emphasis of individual values and continuous review of present day philosophies of patient care.

In building this democratic organization, the administrator has the responsibility of

interpreting this plan so as to make it possible for each to play his role in implementing the plan. A democratically run structure does not mean a structure without leadership. The following expresses this point

Leadership need not be authoritarian. A leader can assist in defining goals without categorically imposing them; he can discuss alternative methods of proceedings without ordering them; he can encourage spontaneity and individual difference without fostering anarchy; he can give support and approval without creating dependency(2).

NURSING SERVICE ADMINISTRATION

A PART OF THE WHOLE

Nursing service does not function in a vacuum but is an integrated part of the whole hospital program. Nursing is a part of medical care and the nursing care goals must be in line with other medical goals for patients. However, effective care of patients also requires cross communication, planning and co-ordination with other hospital departments, such as: supply, engineering, personnel, housekeeping, registrar. The nurse administrator is a part of management and participates in setting philosophy and objectives. She projects needs for adequate budget for personnel, supplies and equipment. She anticipates needs in the expansion of service. She is responsible for evaluating the program and reducing and controlling costs accordingly. She may be a member of a co-ordinating committee which plans and co-ordinates hospital activities(1, 2, 3).

Today a large portion of the patients are on full or partial privileges and our program of activities is a complex and ever-changing problem. Nursing service is concerned with the patient 24 hours a day and of necessity must co-ordinate its activities with those of the medical staff, physical medical rehabilitation personnel, special service personnel and others, all demanding the time of the patient. Unless careful planning is done by the co-ordinating committee, the patient may find himself moving about solely for the convenience of personnel(6, 11, 12).

The National Joint Commission for the Improvement of Patient Care has recommended that hospitals set up patient care committees, to be composed of mem-

bers of medical staff, nursing staff and hospital administration. Equally important is representation from dietary, admitting, social service. These and other departments may not always be regular members but should be invited to attend when matters are discussed that concern their departments.

Following this same pattern, nursing service may organize a Nursing Care Committee which functions similarly to the Patient Care Committee to bring the planning directly to the personnel on the nursing unit and the patients themselves. The membership would include assistant directors, supervisors, head nurses, staff nurses, practical nurses, nursing assistants and/or hospital aides. Here again, representatives from other departments may be invited to participate as related problems arise, such as medical, dietary, social service, psychology.

Another important committee in a well organized nursing service is a Staff Development Committee, in which the leadership comes from the Director of Nursing Education. Here again the membership is representative of all organizational levels, giving them a part in planning for in-service needs for their specific levels. This is an example of the principle that when personnel have a part in problem solving and policy making, they will be more willing to carry out plans.

We strongly believe that while nursing service and nursing education may be separate departments, they should operate under the leadership of the Director of Nursing. In this way the programs in nursing education are geared to meet the needs of nursing service personnel so that they may in turn meet the needs of patients(3).

PEOPLE CENTERED SUPERVISION

An essential adjunct to management of nursing service is an organized program of supervision. It sets lines of authority, points ways to delegation of authority and gives everyone a specific place in the organization with each employee having one immediate supervisor. An organization chart is essential. Because changes take place and accumulate, periodic re-examination of a department's operations are important. The organizational chart can also be helpful to

nursing service personnel to discover how their efforts are related to the work of persons in other departments. The nursing staff needs to develop a comprehensive perception of the hospital's operation(3).

The organizational plan is also the key that opens the way to the delegation of authority all down the line to the immediate supervisor of each employee. Here we learn to whom and for whom we are responsible. As we move more and more toward decentralization of authority, we must select people carefully for designated positions and permit them to carry out their functions with little interference within a control system. This points to the importance of the selection of the right person for the right place. Here administrative skill becomes an art in which we meet the nurses' needs, and motivate the nurses to meet patient needs. Placement of a nurse in a specific job for which she is suited and helping her grow is an important device in stabilization and retention of nurses for psychiatric hospitals.

COMMUNICATION

Effective communication involves more than words; machinery must be set up for getting communications up, down and across. This includes keeping informal, as well as formal, channels open and functioning. There is a need to build adequate follow-up machinery, to shepherd information through to the final step. The feed-back received from communication determines the effectiveness of the communication efforts. Some of the factors in an organization affecting communication are: first, the choice of media, such as, word of mouth, bulletins, house organs, memoranda; second, timing; and, third, the relationship between the sender and receiver in terms of status, position, *etc.*(1, 2, 3, 6).

The greatest factor in communication, however, is the human element. An understanding of the basic process of interaction between individuals is essential for effective communication.

People come from different backgrounds with different value systems and beliefs. The individual behaves in various ways depending on how he feels about his place in the organization. If he has had a voice in

making decisions, he accepts information and orders more readily.

THE PLACE OF THE PROFESSIONAL NURSE

The professional nurse is responsible for the nursing care of patients. This is unalterable, fundamental and permits no exceptions. This is required by the Joint Commission on Accreditation of Hospitals, by the American Psychiatric Association and by the Veterans Administration (8, 11, 12). Since the professional nurses constitute only a small percentage of total nursing service personnel, most of the day-to-day care is rendered by practical nurses, technicians, aides, nursing assistants and attendants. Because of the greater depth and scope of her education the nurse is prepared to accept the responsibility of total care. Every professional nurse in the mental hospital must function as a supervisor no matter what her rank or title. There is no one else in the whole psychiatric setting who is in such a position for co-ordinating all the efforts of various disciplines to meet the needs of the patient.

It is more important today than ever before for the nurse to be able to carry on intelligent and successful liaison between the patients and the various disciplines who have responsibility in their care. It is the professional nurse, the leader of the nursing team, who more than any other person creates the atmosphere of patient care. Through her leadership the patient is respected as a person with individual needs; she realizes the importance of maintaining the dignity of the patient. She also understands the psychological importance of the physical environment to the patient.

Recently there is a changing attitude toward all the activities that rightly should be thought of as belonging to the professional nurse. She is an administrator, teacher, counselor, supervisor, and therapist. The responsibilities of the professional nurse are both administrative and educational in nature, regardless of whether she is a supervisor, head nurse or staff nurse.

Since it is impossible for the professional nurse to carry personally the entire administrative and teaching load in nursing service, the delegation of duties and responsibilities to others becomes most im-

portant. Responsibility for supervision is involved in all the professional nurse's many duties; the greatest of these is the supervision of the non-professional worker. Plans may be carefully made with allied services for the patient, orders well written, clear and up-to-date, duties delegated, and still nursing care has the tinge of custodial care. Good nursing is therefore dependent upon the professional nurse knowing her patients, the care they are receiving and its results.

IN-SERVICE EDUCATION

The nurse administrator's greatest asset for improved nursing care is a dynamic and democratic in-service program. In-service education stimulates the growth of the nurse after she is on the job. The nurse has needs which are not met on a pre-service level as a student, or she has needs that are different from other hospitals in which she has worked, even as a psychiatric nurse. Perhaps the curriculum in her school was "What, When and How to Do," instead of being based on broad, general principles and preparation that enables her to function as a professional nurse in whatever nursing situation she may find herself (3, 11, 12).

The dynamic professional nurse will survey the area she is responsible for and will seek guidance from her supervisor and personnel in the nursing education department as to possible ways and means to improve nursing care. Usually this is accomplished in the following order: through nursing care plans, nursing care conferences and nursing care assignments.

In a nursing care plan, the doctor, nurse and ward personnel identify the philosophy, objectives and goals that may be realistically met for the patients for whom they are responsible. For example, the philosophy, objectives and goals for a geriatric ward would have a different emphasis from those of the acute and intensive treatment area.

The nursing care conference does more than anything else in changing attitudes and feelings toward patients that have been in the hospital for many years. Emphasis is placed on present needs and behavior, not on what the patient was like ten years ago. This group planning for nursing goals for patients is the most effective way of getting ideas from the total group.

When the two preceding phases have been established with a positive approach the assignments in patient care become meaningful and purposeful and they are accepted with interest and enthusiasm. When these three steps are implemented you find counseling, evaluations and ward administration improving far beyond your expectations, as your whole program is people-centered.

SUMMARY

The present day concept in nursing service administration is to demonstrate administrative functions that will provide therapeutic and satisfying situations for patients and personnel. Administration is the management or guidance of an organization for the most effective accomplishment of its stated goal.

The goal of a nursing service organization is more specifically to give continuous care to the patients; to recognize the physical, emotional and social needs of the patients; to meet these needs insofar as possible; to assist in restoring the patients to their optimum health status. In working toward this goal, nursing must maintain itself internally by recognizing the needs of the individuals who make up a nursing service; it must adapt itself to its environment, and working harmoniously with other services of the parent organization (9).

Only through democratic administration can therapeutic and satisfying situations be created for both patients and personnel. Such administration recognizes the worth of each individual. When employees have a part in planning and when they feel respected and accepted, they derive more satisfaction from their work and are better able to respect and accept their patients and co-workers.

Skillful delegation of administrative duties at all levels in nursing service is important if the professional nurse is to be utilized effectively in improving the quality of nursing care in our psychiatric hospital.

This paper has attempted to emphasize the concept of good management principles, in administering nursing services. If we are to accomplish our patient-centered goals, our administration must be people-centered.

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DISCUSSION

WILLIAM S. HALL, M.D. (Columbia, S. C.).—Until recent years, relatively little study and research have been devoted to the science of organizations and administration. It is gratifying to observe that this picture is rapidly changing. The School of Business Administration at Harvard University, The School of Public Health and Administrative Medicine at Columbia University and The Center for Programs in Government Administration at The University of Chicago are only a few of the

fountainheads that are now busily engaged in exploring this new science.

I would like to comment on the following quotation from the paper under discussion :

Leadership need not be authoritarian. A leader can assist in defining goals without categorically imposing them ; he can discuss alternative methods of proceedings without ordering them ; he can encourage spontaneity and individual difference without fostering anarchy ; he can give support and approval without creating dependency. It is a role requiring a delicacy and an awareness of the social consequences of action but it is not an impossible role to play.

The speaker is in agreement that this is the ideal to strive toward ; however, in most large mental hospitals of long standing, it is very difficult, if not almost impossible, to convert such institutions from custodial to active treatment centers unless authoritarian methods are utilized when necessary. This is so because, inasmuch as these institutions are staffed with what might be termed a hard corps of faithful employees who rendered diligent and faithful service during the custodial era, they frequently resist changes and innovations that are conducive toward the "treatment team" approach. In such cases, after the more genteel and democratic methods have failed it is necessary that *staff* administrative officials command and enforce obedience and, even then, several years are usually required to accomplish the desired objective.

It should be remembered that there is a strong tendency for so-called *Line Personnel* to become "non-therapeutically oriented." These people become so involved in the sub-goals of the organization, such as, ward census figures, laundry count, supply requisitions, and housekeeping, that primary treatment goals are often relegated to "some other time" and, of course, in the usual busy ward this deferred period seldom, if ever, transpires.

As you know, the *Line Personnel* actually operate the ward and it is very important that the so-called administrative or *Staff Personnel* recognize the aforementioned tendency because, as the authors of the paper under discussion state :

It is the professional nurse, the leader of the nurse team, who, more than any other person, creates the atmosphere of patient care.

Of interest in this connection are the research findings of Malcolm G. Cynther and Boris Gertz of the South Carolina State Hospital. Edwards Personal Preference Schedule scores were obtained by these researchers from 220 student nurses who were representative of South Carolina's student nurses. Raters independently selected the best and worst nurses in terms of technical competence, dependability, initiative, attitude toward patients and colleagues as well as related factors. The authors of this research work state :

Our results which suggest that student nurses are more concerned with orderliness and sticking to a job until it is finished and less interested in leadership and autonomy than their peers neither confirm nor disconfirm earlier work, as these variables have not been previously investigated. However, these results, in conjunction with the nursing students' tendency to feel more timid and inferior than other women their age, indicate that at least one motive for these girls entering the nursing profession is an attempt to find a stable, well-structured situation in which they will be told what to do and in which they will not be expected to show initiative or extroversive qualities.

The special concern with orderliness, neatness, and careful planning of the "poor" nurses suggests that such nurses would feel particularly comfortable in custodially-oriented hospitals in which security and neatness of wards are considered more important than socialization with patients.

This research work, if confirmed by other investigations, would suggest that nursing administration will have to devote more attention toward overcoming these natural tendencies and personality characteristics of nursing personnel. This is especially true if leadership capabilities on the ward level are to be enhanced.

It is also well that the nursing administrator keep in mind that the patient often views *Line Personnel* as "adversaries" because nursing employees on the ward level are recognized as the prime movers in

bringing about restrictions of patient privileges. The nursing administrator should promulgate measures to lessen these interpersonal feelings in every possible way.

Administration officials would do well to take cognizance of the fact that the professional nurse, as well as the non-professional nursing employees, are frequently guided by and utilize to the fullest, an ambiguous form of cerebration known as "common-sense thinking." Although this nomen is anything but scientific, this form of rationalization is so universal that we need to know more about it. Much research is necessary here, as well as in the whole realm of administration and management of people.

"Administration" has been described as a

continual cycle of planning, organizing, marshalling of resources and controllership, with emphasis on the word "continual." The nurse administrator should be judged in terms of the distance she progresses from "status quo" forward and up the rungs of the ladder to higher accomplishment.

Slightly paraphrasing a statement made by the authors of this excellent paper, from personal experience your discussant would say that, to properly and effectively restructure the administrative organization of a mental hospital from the traditional to the creative and permissive type requires a very long time, confirmed and unshaken confidence, together with ultra and extreme tolerance.

COMMUNITY PRESSURES AND A STATE HOSPITAL PROGRAM FOR CHILDREN¹

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Public mental hospital care for children has been inadequate. All of the reasons which account for poor quality of care of adults in some state hospitals apply as well to the care of children. In addition, it appears that the citizens, the public officials and even many professionals in the fields of psychiatry and of child welfare are less aware of the treatment needs of children than they are of adults. Because of this twofold lack of facilities and of knowledge, the state hospital system is likely to encounter many obstacles when it attempts to provide inpatient psychiatric services for children. This paper draws upon the experience of a recently opened facility in Maryland, the Esther Loring Richards Children's Center, in providing short-term, intensive treatment for seriously disturbed pre-adolescents. It is an account of our experiences and success in providing care of a high quality, and of some of our difficulties.

Institutional psychiatric treatment for children as distinguished from institutional care of children in orphanages, training schools and similar places is relatively new, and almost all the institutions which do give effective treatment have been administered by private agencies. Institutions like The Bradley Hospital in Providence and the Southard School in Topeka, which opened in the 1930's, have had small populations of 20 to 60 patients, and large staffs with a ratio of one or two adults to each child, and have been very expensive. The cost today of treating a child at one of these centers ranges from \$20.00 to \$30.00 a day.

A child who is not admitted to a private institution cannot receive adequate treatment in most states. In 1956 the Department of Public Welfare of Illinois, through the efforts of Dr. Raymond Robertson, pub-

lished the "Report of Survey of State and Territorial Facilities and Programs for Mentally Ill and Emotionally Disturbed Children"(5). This report stated that almost three-fourths of the states were housing and treating children with the adult population of their state mental hospitals. Only 4 states had psychiatric wards for children. Although the Illinois survey stated that children constituted approximately 1% of the resident hospital population, it added that "the information at hand does not clearly indicate the number of children under care." Although 10 states had made or were making surveys to estimate the total number of children needing public institutional care, the Illinois survey commented that "apparently little attention had been given to estimating the over-all need." The conference in 1956 of the American Psychiatric Association and the American Academy of Child Psychiatry on inpatient psychiatric treatment for children also reported that there were few public programs and there were no accurate and reliable studies of the needs for inpatient care for children(6). The publications of the 1960 White House Conference on Children and Youth point out the same needs(8).

PLANNING THE CENTER

In 1956 Maryland also had no separate facilities for children in its public hospital system, although it had experimented briefly with a ward for 9 children in one of the state hospitals. In 1952 a study was published by the Baltimore Council of Social Agencies identifying 131 children in Maryland who needed "closed" institutional care(1). This survey provided a basis for community and legislative action which resulted in the opening of the Esther Loring Richards Children's Center in September 1958.

A few months before the opening of this Center, I came to Maryland as Director of Child Psychiatry of the Department of Mental Hygiene and as director of the new

¹ Read at the 116th annual meeting of The American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

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center. It turned out that there were advantages in one person having this double responsibility. The problems of beginning a particular treatment program and of formulating a state-wide policy were closely related. The success in treating children admitted to the Center was to depend in part upon what was done regarding the children who were not admitted. Almost every individual problem relating to location, construction, budget, staffing, relationship with the community, treatment of the family, the "open" hospital setting has this double aspect.

I will mention here briefly a few problems which are extensively discussed elsewhere(6). There were, in my opinion, serious faults in the physical plant of the Ester Loring Richards Children's Center. The planning for the physical aspects of such institutions is not a simple matter and must include careful consideration of size, functional design, construction materials, relationship to population centers, to transportation, to other hospitals, universities and medical schools. The director should be selected early enough to allow him to participate in the planning and he should have the right to choose his staff.

In choosing staff as well as in submitting the operating budget there should be no compromise on quality of treatment. This applies, of course, to treatment for persons of any age, but it is often difficult to show departmental officials why so many people and so much money is needed to take care of *children*. My search for qualified persons at times involved refusal to accept job specifications and insistence that positions be given higher classifications. It appeared that classification officers were accustomed to consider the worth of an individual in terms of the number of persons for whom he has nominal responsibility, rather than in terms of the quality of treatment he gives to those in his care. It appeared that some officials felt that a public program could be less expensive than a private program. These persons had to understand that because trained professionals are few it is necessary to pay adequate salaries to keep them in state programs, and because these children need individual care large staffs are necessary.

ADMISSION POLICY

A decisive factor in any program is the admission policy. Some children can be helped in a few months, others will require years of care. There are children who are best treated in an open setting where they can have a relative freedom to move in and out of the community, a setting in which they can test their impulses against authority of adults, their relations to peers and the many other factors which comprise "reality." Other children, fewer in number, need the protection and restraint of a closed setting. Age is a factor, and so there must be separate programs for the pre-school, pre-adolescent, and adolescent. Some children will need emergency care, or observation for the purpose of diagnosis. Children who have severe physical illnesses or handicaps will need the services of a general hospital. How can all of these children be cared for?

One approach is to admit to one program all children who cannot be cared for in the community. This serves only to remove temporarily some burdens from the community. Depending on the design of a given facility, treatment programs may be instituted for two or three types of children, but not for all of them. Another approach is to build all the units simultaneously, so that each unit may receive only those patients it is equipped to treat. This would provide good treatment but it might be difficult to persuade taxpayers and legislators to build simultaneously all the units needed in a comprehensive program. Another solution is to provide for all of these units in one large children's hospital, and a few states are now planning such programs. Perhaps because of my experience in small treatment institutions I view with alarm the construction of children's hospitals of two, three or four hundred beds. If treatment of these children is a team approach, depending heavily on milieu therapy and psychotherapy and very sparing in the use of physical methods of treatment, then there is only a limited number of children that each team can handle. I have often been asked what is the optimum number of children in any active treatment program. I can only answer that the director and each member of his treatment staff should know

intimately each child. If an institution is quite large, say 200 children, it must be divided into a number of smaller, distinct treatment units. I feel large hospitals for children will not be adequately staffed, that the children will not receive the close personal care they require.

If a state begins with one program, the community must know that this program cannot treat all children. Some states have called their first treatment units "pilot programs." Some states anticipated the pressures to admit children and have provided in their laws that the control of admissions rests with the superintendent. In Maryland the commitment laws were not changed; children can be sent to the institution by court order or by the certificates of two physicians. Except for age limit no criteria for admission were formulated when the community was asked to give its support to obtaining this facility. Before the institution opened the persons in the state hospitals were not clear about what type of program was being provided and each person in the community saw the center as able to care for any child who could not remain in the community. A large number of children had been referred to the center. Some were in the adult mental hospitals, some in correctional institutions, others in their own homes or foster homes. They ranged from relatively mildly disturbed children to those with chronic, severe personality disorders. It was clear from inspection of the referral material that these children could not be treated in one program and it was also clear that several programs could not be carried on in the single building which would constitute the entire physical plant of the Center.

With the help of professionals in the state hospital system and in the community, an admission policy was prepared and approved by the Commissioner of Mental Hygiene. This policy defined the program as serving children under 14 who could be treated in a relatively short period of time in an open setting. It required an examination of the child and interviews of his parents before admission and that the community agency remain active throughout the child's stay in the Center.

The staff has little legal authority to con-

trol admissions and there was opposition regarding the examination and evaluation of referred children. Some courts, physicians, and community agencies were accustomed to send patients to the state hospitals without prior consultation with the hospitals, even though all of these hospitals had "pre-admission" clinics. In these circumstances the new Center would have quickly become a custodial institution.

To this date the staff at the Center has not been forced to admit any child whom, in its judgment, it could not help. This success required considerable effort. The staff visited many clinics, courts and community agencies. We explained the program to those persons dealing with mentally ill children, and attempted to convince them that in the long run no one would be helped if all problem children were admitted to the Center. When an emergency arose, usually because a judge was insistent that a child be sent to the Center, I went immediately to the judge to discuss the problem. When we could not admit the child, and it appeared that he should be removed from the community, as Director of Child Psychiatry for the Department, I directed that the child be sent to one of the adult hospitals. I visit those hospitals regularly, examine every child admitted and help the staffs to plan for them. Some of the children should not be on wards with the adult patients and while such a resolution of the crises has safeguarded the work of the Center it is neither good for the particular child nor popular with the community agencies or the state hospital staffs. But again the role of Director of Child Psychiatry is an asset, because I represent the Department on all the state-wide committees dealing with disturbed children. I have been able to tell these committees of the limitations of the programs at the Center and at the state hospitals, and indicate the need for other programs. One result was that the Council of Social Agencies began a re-study of the needs of disturbed children. Recently the staffs of the training schools for delinquents have met with representatives of the mental hospitals to plan for the treatment needs of adolescents.

Many persons who initially criticized the Center for its "rigidity" now understand the

necessity for the staff to adhere to its admission policies. If this was to be a short-term, open type of treatment Center it was necessary that it admit only the children who would benefit from this treatment, and the staff could decide only by examining those referred. When the judges and professionals became aware that the Director of the Center had responsibilities for planning for *all* children who needed hospital care, and that the Department of Mental Hygiene was also trying to help those who could not be admitted to the Center, they were more cooperative.

The question is often asked: "Why did you start with a short term, open program for pre-adolescents?" Our answer has been that the turn-over of patients would be greater if we concentrated on those needing short term care (less than a year). In the pre-adolescent group there were few children who needed "closed" care. Parenthetically, it appears that it is seldom necessary to hospitalize a child for observation and diagnosis if the outpatient evaluation is thorough. We require accurate and complete referral reports and our examination includes psychiatric and psychological examination of the child, one or more social service interviews with the parents, conferences with the referring agency, and often psychiatric and psychological examination of the parents. In only one instance did the staff feel that it was necessary to admit a child for observation, and two days of observation were sufficient. It is difficult to treat children in a relatively small program if there are in the hospital children who have not been diagnosed and whose treatment needs are not known.

The majority of cases are presented as emergencies, and in the beginning "emergencies" had to wait as long as 8 or 9 months to be examined. The staff advised agencies that if a child could not remain in the community until our evaluation, he could be sent to the adult hospital. If we subtract the children who were transferred to the hospitals from the correctional schools, surprisingly few pre-adolescents were sent to the adult hospitals. The staffs of these hospitals felt that few of the children committed to them were indeed emergencies. To my knowledge there has been

little written on what constitutes a psychiatric emergency in pre-adolescent children. The dangers of suicide and homicide, the main reason for emergency hospitalization of adults, are, according to the literature, rarely present in pre-adolescents. For many of these children the community had exhausted all its resources and the emergency was a placement problem rather than a safety measure. Some children with severe personality disorders make suicidal threats or gestures in order to control adults. Perhaps the findings of Goldberg and Robinson regarding the handling of psychiatric emergencies in a psychiatric clinic are applicable here(3). These authors studied 82 cases that were given immediate service because they were judged emergencies. They found that "all but 2 were not psychiatric emergencies and could have been handled in a routine fashion had clinic personnel adequately assessed family history and more fully explored the symptomatic picture."

FAMILY-ORIENTED TREATMENT

A basic part of the treatment at the Center is treatment of the family as well as the child. Persons in child guidance practice as well as in inpatient work affirm that the illness in the child bears some relationship to the illness or maladjustment in other members of the family. If a child is to become well and remain well, his parents must receive help either in changing certain of their own patterns of living or in dealing with the child. Our family-oriented program is described in detail in another paper (4), but I wish to stress certain aspects of this program. If the child is to return to his family he should not be entirely separated from it while at the Center. The parents care for the child at home on weekends, and this provides them and their child with opportunities to build better family relationships with the help of the Center and the community agency. The child does not feel totally rejected and abandoned by his parents, the parents do not forget about the child or his problems. They do not feel totally guilty about their failure or completely inadequate as parents because they are thus given an opportunity to act as parents and to take responsibility for the im-

provement in their child. Some persons considered this procedure an unjustified departure from state hospital practice, and that it was adopted because of weekend staff shortage. These children were thought to be "too dangerous" to be allowed so much freedom. Such objections do not apply to a group of children selected because they can be treated in an open hospital setting.

Parents have been enthusiastic about this program even though they often have to travel long distances each weekend. They accept responsibility and have been eager to make the child's weekends pleasant. The child is not required to make a total adjustment to an institutional way of life and when he is discharged he does not have to make a completely new adjustment to life outside of the institution. The weekends provide material for the Center's staff to use in treatment of the child and material for the community agency to use in treatment of the parents.

THE CENTER AND THE COMMUNITY

Because the state hospitals have been isolated from the community, the agencies referring patients to these hospitals have lost contact with their patients and have had to leave the total responsibility for treatment to the hospital. The hospital staff labors under great handicaps in providing a comprehensive treatment program which goes beyond the individual patient and reaches into the family and community. The Esther Loring Richards Children's Center works in partnership with the community in the treatment of the child and his family, and discourages agencies from terminating their services when a child is admitted. The Center exists to provide necessary hospital care, and to effect enough improvement to enable the child to return to the community. He and his family may still need help and it is not practicable for the Center to attempt to provide services which should be available in the community. Bloch and Behrens, in their study of referrals for residential treatment in New York State, highlighted the absence of continuing responsibility for the care of these mentally ill children (2). It is the community, through its agencies and clinics, which should provide this continuity of care and responsi-

bility, using the inpatient treatment center as a specialized resource in their total plan.

Because of the inadequacy of treatment facilities in many communities, there are pressures on the Center to accept children who could be helped in the community by psychiatric clinics, family agencies, specialized school programs, foster care plans. When the staff of the Center, as a result of its examination has seen the need for treatment of the child in the community rather than removal of the child from the community, it has so recommended and declined to accept the child. In these same communities the Center has difficulty in finding agencies willing to assume the responsibility for working out a treatment plan for the admitted child, for offering casework services to parents, for help in discharge planning and for followup after discharge. It would appear that the community which has the most highly developed facilities for non-institutional treatment of children will refer to the inpatient center only those children for whom inpatient care is the treatment of choice, and will, by their skillful cooperation with the center, render the treatment more effective. This was stated a good many years ago by Carl Rogers (7), and has held true in our experience. It is from those communities which lack adequate local services that we have received the greatest pressure to accept children who were not in need of institutional care. If all communities had reasonably adequate local services for neglected, dependent, delinquent and mentally ill children, we might be able more easily to arrive at a valid estimate of the need for inpatient services. The danger, I believe, in estimating bed needs without taking into account the need for community services, is that we may provide too many beds and facilitate the community unloading its due share of responsibility on the state hospital system. Since we have not at this date an over supply of beds perhaps we can build wisely.

CONCLUSION

I have tried to show how a public hospital can give the high quality of care given by private residential centers. Except for our plan of having the child live with

his family each weekend, there are no new concepts of care but rather an application of those principles of modern psychiatric care which are well known and which have been practiced for years by well known hospitals and social agencies. There must be a determination to resist pressure from many sources and a willingness to work with community agencies. If such a program can surmount the initial difficulties it can demonstrate by its treatment results the effectiveness of its work.

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THE "ADEQUATE RELAXATION INTERIM" FOLLOWING SUCCINYLCHOLINE ADMINISTRATION IN ELECTROSHOCKTHERAPY

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Succinylcholine chloride (SCC) is used in the convulsive therapies for the purpose of eliminating bone and muscle injuries. However, the optimal time for the administration of electric current following the intravenous injection of SCC is still controversial. EST has been administered from 10 to 65 plus seconds following the injection of SCC. As each worker attempts to give the grand mal at the time of maximal muscle relaxation, the marked variation in the time of giving such stimulation is due to a difference of opinion as to when this occurs. Murray(1), Holmberg and Thesleff(2), Impastato and Berg(3), Glover and Rosium(4) apply the GM stimulus from 10-20 seconds after the SCC injection, while Moss, *et al*(5), McDowell, *et al*(6), Price and Rogers(7), Richards and Youngman(8) and Alexander, *et al*(9), stimulate from 45 to 65 plus seconds after the SCC injection.

The purpose of this study is to determine the optimal time or interim following the injection of SCC when the grand mal may be given.

MATERIAL

Twenty patients for whom EST was prescribed were selected at random: 11 females, age range 19 to 60 and 9 males, age range 23 to 61. Among these were 16 schizophrenics: 8 catatonic, 4 paranoid, 2 hebephrenic and 2 mixed types. Of the rest, 2 were involuntal; 1 paranoid and 1 melancholic; 1 manic-depressive depressed and 1 psychotic due to alcohol. Physical conditions of all patients were grossly normal and none was a poor risk.

EST was administered 3 times weekly and at each treatment recordings were made of: 1. The interim of time between the injection of SCC and the appearance of the circumoral fasciculation caused by

the SCC; 2. The interim between the appearance of the circumoral fasciculation and the administration of the grand mal stimulation; 3. The degree of muscle relaxation. The grand mal was given at various interims, each observation being recorded on consecutive treatment days. At the first treatment the grand mal was applied 5 seconds after the circumoral fasciculations were first seen and on subsequent treatments the interim was lengthened (see Fig. 1). In all patients atropine 1/75 gr. was administered I.M. ½ hour before each treatment. A standard dose of 15 mg. of SCC was used in all patients. No oxygen was used either before or after each treatment. No barbiturates were used.

SCC CIRCULATION TIME

After one works with SCC, even for a short time, it becomes obvious that the interim between the injection of SCC and the appearance of perioral fasciculations depends upon the circulation time. We recorded the circulation time of the SCC in all patients and found it constant for each of them. It varied from one patient to another, the average being 13 ± 5 seconds.

In all of these patients we also measured the arm to tongue circulation time with calcium gluconate and found it to be 1 to 2 seconds less than the SCC circulation time. We mention this to point out the variability of the interim between the injection of the SCC and the appearance of perioral fasciculations and to urge that time measurements of the effect of SCC be made not from the beginning of the SCC injection but rather from the appearance of the perioral tremors. This, we believe, is a fixed invariable point and determinations of interim periods starting from this point will yield more accurate results. We have done this in our work.

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GRAND MAL STIMULATION AT VARYING INTERIMS FOLLOWING SCC PERIORAL FASCICULATIONS IN STANDARD AND PM-GM EST TECHNICS

PM-GM TECHNIC

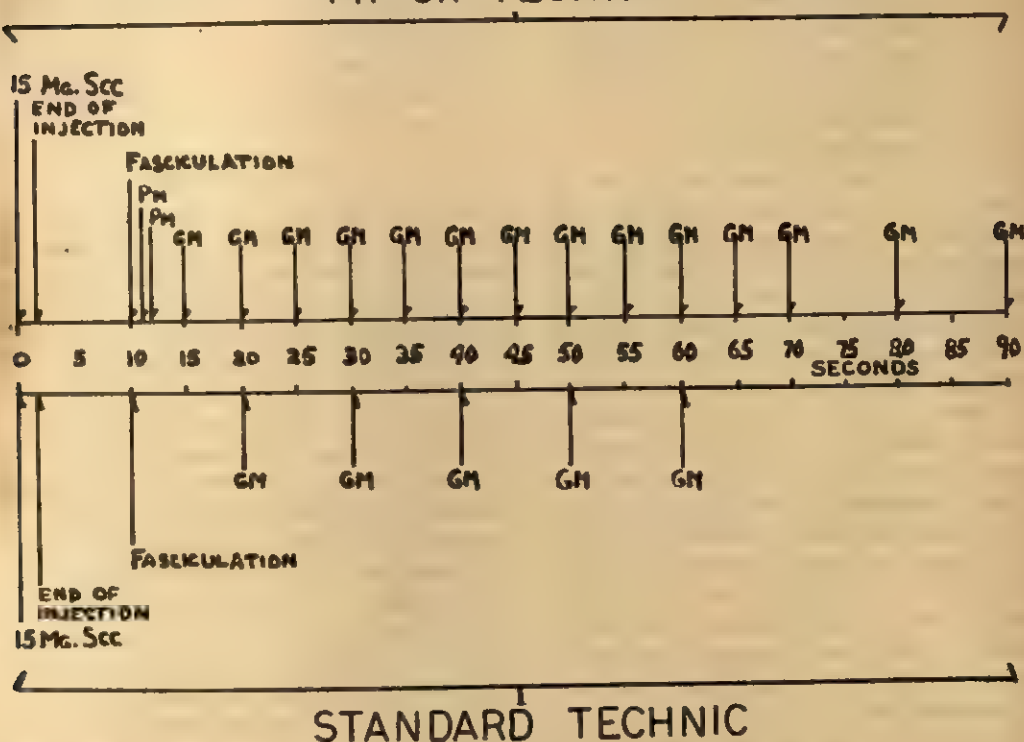


FIGURE 1

METHODS OF EST APPLICATION

Standard Technic: SCC was injected within 2-3 seconds and at 10-20-30-40 and 50 seconds following the appearance of the perioral fasciculations the grand mal was given with the Molac II Alternating Current Machine in the "High" position (10). (For the purpose of our study the Molac II can be equated to any ordinary AC machine.)

PM-GM Technic: SCC in many patients causes unpleasant feelings of suffocation if the grand mal is not given soon enough. This undesirable effect occurs within a few seconds after the appearance of perioral tremors. To circumvent this the patient is either anesthetized with a barbiturate prior to the injection of the SCC or rendered unconscious with a petit mal stimulation at

the first sign of perioral fasciculations. This latter method is known as the PM-GM Technic(11), described as follows: a small dose of SCC is quickly injected intravenously. As soon as the perioral tremors are seen two petit mal stimuli are given in quick succession and followed 5 to 10 seconds later by the grand mal.

For our experiment we modified this technic as follows: SCC was injected within 2 to 3 seconds and as soon as perioral twitchings were seen 2 petit mals in quick succession were given with the Molac II machine in "Low" position (with the classic AC machines the petit mals may be given by setting the machine at 110 volts at 0.1 seconds). Then, on successive treatments the grand mal was given with the Molac set in the "High" position after 5-10-15-20-25-30-35-40-45-50-55-60-65-70-80-

90 seconds. The degree of muscle relaxation in both methods was rated as follows :

0 = No relaxation

1 plus = Forearms flexed on arms, considerable force required to unbend the forearms.

2 plus = Forearms flexed on arms, little force required to unbend the forearms.

3 plus = Forearms not flexed. A very soft convulsion present.

4 plus = Convulsion barely noticeable.

The interim between the first appearance of the perioral fasciculation and the GM stimulation we have named the "waiting period." In the Standard Technic, after a waiting period of 10 seconds, the degree of relaxation was 1 plus. Following a waiting period of 10 to 20 seconds relaxations were 2 plus. The waiting period between 20 to 30 seconds induced further relaxation in most patients to 3 plus. In some patients, ratings of 4 plus were obtained. The degree of muscular relaxation observed after the waiting period of 30 to 40 seconds varied in no way from that of the 20 to 30 seconds waiting period. Beyond the 40 second waiting period the degree of muscular relaxation diminished and after 50 seconds ratings were reduced to 1 plus.

With the PM-GM Technic, after a waiting period of 5 seconds (since the PM are given as soon as the perioral fasciculations

are seen, for practical purposes the two may be said to take place at the same time) the degree of relaxation was already sufficient to be rated as 1 to 2 plus. In most cases, after 10 seconds the muscle relaxation was 3 plus and in some cases 4 plus. This degree of relaxation was noted to extent to 70 seconds following petit mal application and only diminished in intensity after that period of time.

CONCLUSIONS AND SUMMARY

The foregoing investigation demonstrates that the SCC injection causes relaxation lasting for a variable time depending upon the EST technic used. With the classic AC treatment the interim begins 20 seconds following the appearance of perioral fasciculations and lasts for 20 seconds. With the PM-GM technic the interim begins in 10 seconds and lasts 70 seconds.

After 40 seconds with the Standard Technic and 70 seconds with the PM-GM Technic, the degree of relaxation lessened and treatments given at this time or later are potentially capable of producing injury. It may therefore be concluded that with the Standard Technic, without using barbiturates and quickly injecting 15 mg. of SCC, one should not wait longer than 40 seconds after the onset of perioral fasciculations. To administer the grand mal with the PM-GM Technic it is apparently

RELAXATION RESPONSES WITH GM APPLIED AT VARIOUS INTERVALS FOLLOWING SCC PERIORAL FASCICULATION IN STANDARD AND PM-GM TECHNIQS

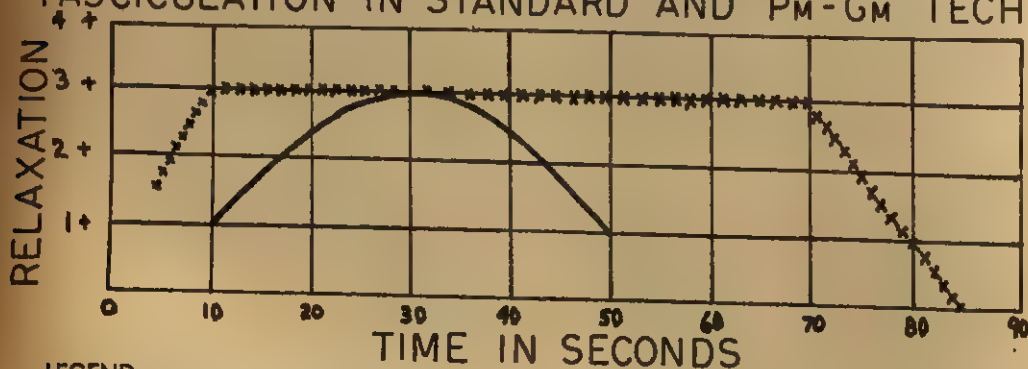


FIGURE 2

safe to wait up to 70 seconds. We were surprised to discover that the double petit mal greatly prolonged the "adequate relaxation interim." A possible explanation for this might be that the petit mal application releases acetylcholine which re-enforces and prolongs the action of SCC. Further study to discover the actual reason why the petit mal re-enforces and prolongs the action of SCC, should be undertaken.

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THE CULTIVATION OF COMMUNITY MENTAL HYGIENE LEADERSHIP ABILITY AS A PART OF A PSYCHIATRIC RESIDENT'S TRAINING¹

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Changing attitudes towards mental health and patterns of care for the psychiatrically ill have greatly increased demands for psychiatrists experienced in community mental health and motivated to work in this psychiatric specialty. In the State of Maryland we are developing a program of training in public health psychiatry for psychiatric residents which we believe is unique in the United States. The purposes are: first, to incorporate the practical and theoretical aspects of public health psychiatry into the psychiatric residency programs in the State of Maryland; and secondly, to provide psychiatric service of a high quality on a consistent basis to understaffed areas. The program is a cooperative venture of the State Health Department and the various university, private, and state psychiatric training centers in Maryland. We believe that it is a pattern that can be readily adapted to other areas, using existing personnel and adding little to the cost of present mental hygiene programs.

The training is based upon the point of view that leadership, inventiveness and industriousness are best furthered in the maturing physician by placing him in a position of responsibility and providing him with a source of senior advice without continual, on-the-spot supervision.

Practical experience in community mental health has not been included heretofore in the usual resident's training, even though he may have considerable experience in a large university or community clinic. These firmly established and well operated departments insulate the resident from the community by their size, and by the division of responsibility.

In our present enterprise, designed to improve the residents' understanding of community psychiatry, senior psychiatric residents serve as consultants in mental health to the county health departments within commuting distance of the training center. Each resident has the following responsibilities:

1. Serving as psychiatric consultant to the local health department and staff, to private physicians and to other community agency workers.

2. Assisting the county officer in planning a mental health program.

3. Acting as director of a part-time mental health clinic in the county department and assuming the medical responsibility for providing psychiatric diagnosis and treatment for adults and children.

4. Supervising the work of non-medical clinic staff and handling correspondence and reports in connection with the program as required.

5. Participating in the in-service education of health department staff and other professional and public mental health educational programs upon request of the local health officer.

The counties selected for this educational enterprise have been small enough and distant enough from the metropolitan area, that each is a fairly self-reliant community, with a structure and leadership pattern which can become familiar and understandable within a moderately brief period. The compactness of the counties permits the resident to get an overall view of the interaction of various agencies. In many instances, there are certain key individuals in the community agencies who can be dealt with informally and by personal contact. In addition, there are fewer buffers between the psychiatric consultant and the community agencies and leaders than exist in the large metropolitan clinics. The psychiatric resident is very much on his own in a situation demanding forbearance, tact,

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flexibility and the willingness to learn. He is challenged by a job requiring ingenious solutions to immediate problems and by stimuli arising from the opportunity for leadership.

Participation in the program is based upon the recommendation of the resident's chief of service, and approval of the Chief of the Division of Mental Health for the State Department of Health, and the local health officer. The participants must have had at least two years clinical psychiatric experience and must have indicated by their past performance that they have potential for leadership and a flexible orientation towards the field of psychiatry. Each resident spends one work day per week as consultant to the local health officer of a rural county, and in this position he is psychiatric director of the mental health clinic for that county. While on the job he has no direct senior psychiatric supervision. This is provided in the form of individual conferences with the Supervisor of the Training Program and the Chief of the Division of Mental Health of the State Health Department. Group meetings and discussions are led by consultants to the State Department of Health in the specialties of psychiatry, psychology, psychiatric social work, and psychiatric nursing. Academic experience in problems of public health psychiatry are provided by a seminar in community mental health given in the School of Hygiene and Public Health of the Johns Hopkins University. By periodic presentation of his community experience to the staff of his parent institution, the resident evaluates his experience and receives the support and criticism of fellow professionals not directly concerned with the state program. The

resident compensates his parent institution for the time away by working additional time during evenings and weekends and is, in turn, compensated by the training experience and by a stipend from the health department. In total, they spend 4 work days, plus 11 hours in supervisory and seminar sessions per month.

To illustrate the variety of experience present in the program, the following figures are offered covering the 5-month period of one resident's experience. During that period he saw 30 new patients for evaluation and had a total of 65 followup patient visits. There were also 55 interviews with relatives, referring agencies and local physicians. He attended 5 meetings with the local mental health association representatives, 4 with school authorities, and made one public presentation to the local mental health association. He had direct personal contact with 28 key community personnel including physicians, public health nurses, welfare workers, school superintendents, school principals and counselors, clergymen, and representatives of law enforcement, court and probation services.

In summary, we believe that the Maryland program enriches the resident's training experience, expands psychiatric residency programs, and provides mental health services to areas that have always been difficult to staff. Although this program is in the early stages of development, there is some indication that it will encourage many psychiatrists to view problems of community mental health sympathetically and consider public health psychiatry as a possible area of specialization.

A LONGITUDINAL STUDY OF SCHIZOPHRENIA¹

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AND T. T. COULTER, Ph.D.²

The study was designed to document the long-term clinical course of schizophrenia, as reflected in the present status and past history of a group of World War II veterans diagnosed as schizophrenic, and under surveillance by the Vancouver office of D.V.A., since the end, or shortly after the end of the War. The first objective of the study was to determine the relationship between the present status of the patients, and the onset and course of the disease. The next two objectives were concerned with ascertaining the effects of direct social support, that is, by the patients' families, and indirect social support, provided by D.V.A., including pensioning, on the course and present status of the disease.

A survey of the literature was made with reference to the objectives of the study and the methodology to be employed. Previous studies of this particular kind have been, surprisingly, rather rare (1-5, 7-10, 12, 13).

PROCEDURE

The population used was the total number of World War II veterans, namely 118, in British Columbia, diagnosed as, and pensioned for, schizophrenia. Of these, 64 were ambulatory patients, 55 males and 9 females, and 54 were hospitalized, 51 males and 3 females.

Four lines of investigation were: 1. *Psychiatric Status*: The outpatients were examined by one of the psychiatrists and the hospitalized patients by the other psychiatrist. The clinical findings were then summarized on a revised edition of the Malamud and Sands (10) psychiatric rating scale and on an "insight" scale. Inter-psychiatrist (rater) reliability had previously been established as significant ($r=.84$) on an independent, but similar, sample of 30 patients.

The 7 point scale assessed the following 19 functions: appearance, motor activity, responsiveness, aggressiveness, socialization, communicability, thought processes, attention, awareness, association, content, memory, affective reaction, feeling tone, mood, sleep, nutrition, sexuality, and work. The "insight" questionnaire assessed the extent to which the patient understood the nature of his illness, what types of treatment he had received, the name he gave to his illness, and his reactions to pensioning. 2. *Psychological Status*: The Wechsler Adult Intelligence Scale and the Rorschach, scored according to the technique of Buhler, Buhler and Lefever (6), were administered to each patient. 3. *Personal-Family-Treatment History*: These were obtained from the rather comprehensive District and Hospital files, using military, medical and social work data. 4. *Interview of Relatives*: The relatives who had indicated the most interest in the patient over the years were visited and interviewed by a member of Veterans Welfare Services.

RESULTS AND DISCUSSION

The frame of reference for the analysis of the data that was the distribution of scores on the psychiatric rating scale. Comparisons were made between ambulatory and hospital groups, and then between two ambulatory and three hospital subgroups, using chi square and the t. test for all comparisons—A1 and A2, H1 and H2, H2 and H3, A1 and H1, A2 and H2, A and H.

Our first finding from the psychiatric data indicated that the relationship between mental status and ambulatory or hospital status was not a close one; 29.70% of the ambulatory group revealed as much pathology as, or significantly more than, a sizable portion, 74.08%, of the hospital group. Grossly pathological symptoms, namely, hallucinations and/or delusions, were found in as many as 20.31% of the ambulatory group and in only 37.29% of the hospital group. While some of the ambulatory pa-

¹ Read at the annual meeting of the Canadian Psychological Association, Edmonton, Alberta, June 1959.

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tients revealed an ability to exercise the judgments and make the decisions of ordinary life by thinking in concrete terms and using habitual responses, careful scrutiny revealed that they continued to suffer from thought disorder. Others had learned to inhibit the expression of their delusions and inappropriate feelings. Still others revealed gross personality distortion and desocialization. The ambulatory group, but most particularly ambulatory subgroup A1, exhibited the greatest degree of insight into : the nature of their illness, the type of treatment they had received, the contribution of treatment towards their improved state, and that their illness was a mental one. The 7.63% of the population who mentioned psychotherapy, acknowledged it in only rudimentary terms. Even our best adjusted patients appear to have only very superficial insight. But what they do express in action, and in one way or another, in words, is that they have developed various self-protective devices, even to the point of repressing mention of the fact that their illness was emotional or mental. The insight they have found useful is the acknowledgment of their limitations.

With respect to the psychological evaluation, analysis of the Wechsler revealed a significant relationship among current level of intellectual functioning, extent of impairment and psychiatric status. The ambulatory group are brighter and less impaired than the hospital group, while ambulatory subgroup A1 reveal the same trend with respect to ambulatory subgroup A2. Some degree of impairment, as measured by vocabulary scatter, verbal-performance discrepancy, and inter-test variability, was found in all of the patients : 29.57% exhibited minimal impairment, 52.18% moderate impairment, and 18.25% advanced impairment. There is every indication that, while a good intellectual endowment may not preclude affliction by the disease, it does provide greater potential for rehabilitation, even when there is continuing thought disorder. The correlation (r) between the Basic Rorschach Score and the psychiatric rating scale was $-.53$, and significant beyond the .01 level of confidence. When the Basic Rorschach Scores were distributed among Buhler's(6) four levels of integra-

tion—Adequacy, Conflict, Defect, Reality Loss—we found : no entries in the initial or Adequacy category ; 14.78% in the Conflict category (with only the ambulatory group contributing to this category) ; 23.48% in the Defect category (17.39% of these were in the ambulatory group) ; the remaining 61.74% in the Reality Loss category (20.87% of these were in the ambulatory group). It is significant that more than 70% of the ambulatory group evidence very tenuous reality testing, *i.e.*, register in the Defect and Reality Loss categories. While all of these patients have been through a period of personality disorganization, comparatively few have regained their premorbid intellectual efficiency or personality stability.

In our third line of investigation, by reviewing historical data, we sought to clarify some of the differences in current reaction-patterns among patients, as evidenced in the psychiatric and psychological findings. We accordingly turned to factors that might be of etiological import, together with data that reflected the course of the disease over the years.

With respect to service history, we could detect no significant trends. Age of enlistment (range : 17 to 51 years, mean : 23.22 years), though coinciding with age of maximum susceptibility to schizophrenia, was not significant. Length of service (range : 3 to 123 months, mean : 33.11 months), *i.e.*, prolonged exposure to stress, did not reveal a significant pattern. Area of service (41.52% never left Canada and only 33.90% served in a zone of operations), *i.e.*, intensity of stress, also proved to be non-significant. Nor were we able to detect the existence, in any significant proportion, of specific precipitating factors, apart from military stress. What aspects of Service life can be construed as having been most contributory ? Anxiety to an intolerable degree, may have been aroused by separation from familial and environmental supports. Service may also have demanded an ability to form types of relationships beyond these persons' range of adaptability. All we can say is that 77.97% of our group initially broke down during Service, for an overwhelmingly large proportion of these the break was psychotic and quite acute.

Secondly, we reviewed developmental

history. Pathogenic parental attitudes (rejection, extreme discipline, extreme independence, extreme indulgence and extreme overprotection) were found in only 44.07% of our population. Wahl(13) also reports pathogenic parental attitudes in only 50.3% of his group. Relationships with siblings were inappropriate in 31.51% of our group. Caldwell(7), however, reports that 60% did not evidence strong family ties. There is some possibility that relatives who provided the histories in our group have been unduly defensive or not sufficiently critical. Death, divorce or separation of parents before the end of adolescence was found in 31.36% of our group as compared to Wahl's (13) finding of 41%. In any event, we found no significant differences among our subgroups with respect to the above three factors. Like Caldwell(7) and Wahl(13), we could not demonstrate readily discernible conflict in early relationships in every patient under investigation.

Thirdly, we searched for signs of predisposition towards mental illness and premorbid personality patterns. The incidence of psychiatric history in immediate family appears to be much higher in our study than in the population as a whole—30.15% revealed mental illness in the immediate family (parents and siblings). These figures are probably higher than Caldwell's(7) stated 33%, as he included under immediate family, grandparents, uncles and aunts. However, there were no differences among our subgroups with respect to predisposition. Data about premorbid personality were only available for 60.17% of the patients and for somewhat more than two-thirds of these we could not find evidence of schizoid or pronounced introverted trends. Our findings, as well as the research of Bellak and Parcell(2), Caldwell(7), Ripley and Wolf(12), do not reveal a readily recognized, consistent pre-schizophrenic personality.

Fourthly, we reviewed educational and occupational history. The mean educational level was 9.55 grades, and the range from grade 3 to 5th year university. Educational level was significantly higher for the ambulatory compared to the hospital group and for ambulatory subgroup A1 compared to ambulatory subgroup A2. Premorbid oc-

cupational level, but not work stability, was significantly higher for the ambulatory compared to the hospital group. The effect of the illness on the ambulatory group has been downward vocational mobility and decreased work stability.

Fifthly, we reviewed treatment history. All of the veterans in our study have been hospitalized for their mental illness. The last decade and a half, for many, has been a series of exacerbations and remissions; for others, a single episode lasting 16 years without remission. The group has had on the average 3.91 "breakdowns" necessitating hospitalization, and has spent on the average 74.07 months (range was 2 to 192 months) in hospital. Outpatient contact has until recently been restricted to some of the better-integrated patients. With respect to treatment *per se*, the relationship between type and extent of treatment and present status remains unclear. While the group as a whole has been exposed to rather intensive treatment, the hospital group had a greater variety, including psychosurgery, somatotherapy, chemotherapy, and milieu therapy. There is, however, little indication that psychotherapy played a significant role in the treatment of these patients. Though the ataractic drugs have undoubtedly played a significant role in stabilizing many of our patients, and most particularly in facilitating the release of some long-term cases, the overall effect of the drugs, for the group as a whole is unclear as yet. With respect to the type of schizophrenia, 19.49% were classified as simple, 58.48% as paranoid, 13.56% as catatonic, and 8.47% as hebephrenic. But we found no relationship between type of schizophrenia and our subgroupings.

Our fourth line of investigation for clarifying differences in current reaction-patterns of patient focused on the relatives—their attitudes, expectancies, and day to day treatment of the patient. Data, based on interview and observation of the home setting, indicate that the general health, mental stability, competency of, and general standard of living for, an overwhelming proportion of the informants is not out of keeping with the community at large. In contrast to the hospital group, relatives of the ambulatory group, and more particular-

ly ambulatory subgroup A1, are better informed about mental health and mental illness, are more insightful about the patient's condition and limitations, and are more optimistic about the patient's future. At the present time, 78.12% of the ambulatory patients are living with relatives, and receiving day by day support; more than half of the remainder, though living apart from relatives, are still within the orbit of the family influence. While one of the residual effects of this disease is to decrease the range of relationships, even for the better integrated, schizophrenia does not preclude or incapacitate individuals from establishing and maintaining enduring relationships. Granted that the relationship is often with a parent (50% of the ambulatory group live with a parent) and in our groups most often with a mother, where pathological behaviour may be condoned or even reinforced, this has important implications for the treatment of schizophrenia. Furthermore, 21.19% of the group under review are married, and almost all contracted their marriage after their mental illness was manifested. Two-thirds of the married patients are ambulatory, and in fact in ambulatory subgroup A1. Interestingly, the marital adjustment is defined as good in 78% of our cases; 72% have children; and the attitude towards the children is more or less appropriate in 85% of these cases. With respect to those patients residing with a parent, if the parent should become incapacitated, a considerable number of patients would, in all probability, decompensate, or their adjustment would be lowered to the point where they would require some form of custodial care or close support from the community.

Inter-related to the emotional support that has been provided by relatives, is the support made available by D.V.A. pensioning. An analysis of patients' and relatives' attitudes reveals that 84.38% of ambulatory patients, as well as 85.85% of relatives of both ambulatory and hospital patients, expressed appreciation of pension, both with respect to the economic security, the treatment, and the interest that have been provided. Pensioning also permits certain patients to hold down less-challenging jobs, or to remain nearly self-supporting with

part time work, thus protecting them from one source of stress. Pensioning also often qualifies relatives' attitudes towards the patient and his illness in a positive manner, thus enhancing and reinforcing relatives' support of patients. For the group under review, there is every indication that the benefits from pension have more than offset the adverse effects that this might have had on patient's motivation to work. It is also most probable that if D.V.A. did not contribute to the economic and therapeutic support of these patients, the responsibility would have to be assumed by some other agency in the community.

One trend was discernible in our analysis of the data—the trend towards alteration in adjustment potential or residual impairment. In order to document this more explicitly, we focused on only the ambulatory group; and to arrive at an estimate of impairment from the premorbid level for this group, we took into consideration the psychiatric data, the psychological data, employment status and their sphere of relationships. Weights were assigned to the distribution of scores on the psychiatric rating scale, and scale of insight; to the index of inefficiency on the WAIS, and to the levels of integration on the Rorschach; to the extent of vocational mobility and instability; and to the social interaction or sphere of relationships. A composite score was, therefore, available for each patient. The scores were then distributed among categories which we designated minimal, moderate, advanced, and analyzed by means of chi square. Our index of impairment revealed: 1. Half of the ambulatory patients show moderate impairment, with the remainder being almost equally divided among the minimal and advanced categories; 2. Only one-third of the ambulatory subgroup A1 show minimal impairment, the remainder of this subgroup exhibit more severe impairment. None of the ambulatory subgroup A2 were found in the minimal category, and two-thirds were in the advanced impairment category; 3. There is a significant relationship between level of adjustment and type of supporting figure. Patients residing with a spouse tend towards the minimal-moderate end of the impairment range (11 of the 15 in the minimal

category are living with a spouse), whereas those living with a parent, or alone, tend towards the moderate-advanced end of the range.

How might we account for the fact that a sizable portion of the hospital group evidenced considerably less pathology than some of the ambulatory patients and yet remained institutionalized? Few of these patients would be regarded as dangerous to themselves or to the community at large. Our observations of these patients, and the data on hand, suggest that many remain in hospital because of two factors. The first is the absence of an interested family member to either pressure for release or assume responsibility for the patient if this has been suggested. Within the hospital group, 50% either "seldom" or "never" receive a visitor—all but one of the patients who are never visited are in the less-severely disabled hospital subgroups. Dependency appears to be the other main factor that is keeping some of these patients in the hospital. Many patients find that their dependency needs are most adequately satisfied by the current medical-social arrangement of the hospital.

CONCLUSIONS

We were not able to demonstrate significant trends or relationships between the onset and course of the disease on the one hand, and the present status on the other, in a group of schizophrenics, many of whom might be classified as chronics. Age at breakdown, acute onset of symptoms, developmental factors, in themselves or in toto, do not appear to be reliable predictors as to the long-term picture of adjustment for such a group. Intellectual endowment and education, which are themselves highly correlated, were found to be predictive indices as to adjustment potential. The most important factor, however, was that of family support—support that took the form of continued responsible acceptance of the patient. As a matter of fact, whether a patient was hospitalized or remained in the community often depended on the extent of direct social support. We suggest that prognosis in schizophrenia depends as much on the unfaltering support of the relatives as on symptomatology or extent of treatment. If direct social support by the family is the

necessary determinant for a more adequate and stable level of adjustment, and indeed it appears to be, indirect support—economic, treatment, interest—by D.V.A. is a secondary, but important factor for continuing remission. Long-term involvement with D.V.A. also qualifies relatives' attitudes towards the patient and his illness in a positive manner, thus reinforcing relatives' support of patients. At least in the group we are investigating, it is not surprising to find that the disease has been lengthy and self-limiting, and that patients have been left with some degree of residual impairment. We must emphasize, however, that chronicity diminishes, but does not destroy the patient's capacity to enter into meaningful human relationships. We must further emphasize that treatment responsibility should extend beyond the period when the patient is floridly psychotic. Many patients in fact require lifelong "rehabilitation," and if influences from outside of hospital have as much, and at times more, to do with rehabilitation than treatment within the hospital, then family and community should share in this rehabilitation programme from the very onset of the disease. There is also firm reason to indicate that many a chronic schizophrenic patient is able to learn, by progressive maturation, to be self-supporting, at least partially, in the community, when given the opportunity for a continuing rehabilitation programme.

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CLINICAL NOTES

(The Clinical Notes report the findings of the authors and do not necessarily represent the opinions of the Journal.)

EFFECTS OF A DRUG ON THE BODY ODOR OF THE CHRONICALLY MENTALLY ILL

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Sch-6673,³ which is similar in chemical structure to Trilafon, was evaluated as a tranquilizer. After the study⁴ was completed, 3 patients were kept on the drug because of its good effects. One of these patients had a marked body odor which disappeared completely while on Sch-6673 and re-appeared when he was placed on a different drug.

Eighteen patients, age 22-55 (6 males, 12 females), were then chosen because of their unpleasant odor and were started on Sch-6673 to determine the drug's deodorizing effect. The intent of the study was to conceal its purpose from the ward employees. Diagnoses: schizophrenia 9, mental defect 2, C.B.S. 5, alcoholics 2.

METHOD

The patients were divided into 2 groups according to sex. The female group remained on drug during the course of the study to determine if the effect was lasting. The male group was placed on the drug until a change in their odor became apparent, then the drug was discontinued until the odor reappeared and were placed on the drug again until deodorized.

No change was made in the patients' diet,

the frequency with which they were bathed or their clothing was changed. They remained on the same wards. Three research personnel made a daily check of the patients' odor by standing close to them during an interview. An additional check of the odor was made while taking the patient's blood pressure and having him raise and lower his arms.

The initial dosage was two 50 mgm. tablets daily by mouth for 15 days, then a 50 mgm. was given every other day for 22 days. The change in odor appeared to be dose-related. As a rule the patient remained deodorized for 3 days after the drug was stopped.

RESULTS

Only one patient, a schizophrenic female who developed epileptiform seizures, was dropped from the study.

By the 12th day the characteristic body odor was no longer apparent in 14 of the 17 patients. This change was noted in 4 patients after 3 days, in 6 more after a week and in 4 others at the end of 12 days. Ten of these 14 patients remained odor free for 16 to 22 days. In the other 4, the change was intermittent, i.e. the odor was evident on some days and absent on others.

The effect did not appear to be sex-related. In those male patients whose body odor disappeared while they were on the drug, the odor re-appeared when the drug was stopped and disappeared when it was re-started.

DISCUSSION

Our impression is that the effect of the drug was more pronounced in schizophrenics than in the other patients. If this is correct, and if the perspiration of certain

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³ This study was made possible by a generous supply of Sch-6673 known under the trade mark Tindal, placed at our disposal by Schering Corporation, Bloomfield, N. J.

⁴ We wish to express our thanks and appreciation to Doctor Jackson A. Smith, Clinical Director, Illinois Psychiatric Institute, for his advice and suggestions. We also wish to thank Mrs. Shirley Engelhardt, R.N., Supervisor, Miss Myrna Willerton, R.N., Mrs. Frances Portenier, Assistant Supervisor, and Mrs. Geraldine Turley, Research Secretary.

schizophrenics has a distinct odor,⁵ then that odor may be the product of a characteristic metabolic disturbance which might be modified by the use of Sch-6673.

This report is preliminary and we are attempting to check these observations by making more exact determinations of

⁵ Smith, Kathleen, and Sines, Jacob O.: Arch. Gen. Psychiat., 2 : 184, Feb. 1960.

changes in odor, and non-psychotic patients are also being included in another group. We are aware that "bad" or "schizophrenic" odor is a highly subjective matter and that it is no longer fashionable to identify an illness by its odor. However, if a group of schizophrenic patients who "smell alike" can be identified and altered, then other more measurable variations may be sought.

THE USE OF A NEW ULTRA-SHORT-ACTING INTRAVENOUS ANESTHETIC IN SHOCK THERAPY

WILLIAM KARLINER, M.D.,¹ AND LOUIS J. PADULA, M.D.

Brevital Sodium (methohexital sodium²) is a new intravenous barbiturate anesthetic. It belongs to the oxybarbiturates which are known to be less toxic and ultra-short-acting anesthetic agents. Stoelting(2) reported that Brevital "proved three times as potent as pentothal sodium and 4½ times as potent as surital sodium."

Many psychiatrists use barbiturate anesthesia in conjunction with succinylcholine chloride modified electroshock therapy. Such an anesthesia helps to allay the patient's apprehension and fear of treatments. Moreover, this anesthesia eliminates the awareness of the unpleasant side-effects of succinylcholine chloride, such as muscular fasciculations and feelings of suffocation. Friedman(1) used Brevital as an intravenous anesthetic agent for electroshock in 72 patients. He stated that "the anesthetic efficiency, safety, rare incidence of complications, and ease of administration compared favorably with the commonly used thiobarbiturates."

The search for an improved method of treatment motivated us to clinically explore this new anesthetic in electroshock and Indoklon convulsive therapy. The high potency of Brevital and its ultra-short-acting duration necessitate a different technic of administration. Atropine sulfate 1/75 grain is given subcutaneously 30 minutes before the scheduled treatment. However, when

ever indicated, atropine may be given intravenously through a 22-gauge needle immediately preceding the treatment. The needle is left in situ and after removing the syringe containing the atropine, a 10 cc. syringe containing a 1% solution of Brevital (50 cc. distilled water added to bottle containing 500 mg. Brevital) is connected to it. Five to 10 cc. of Brevital solution (50 to 100 mg.) is usually adequate to anesthetize the patient. We found the rate of injection of one cc. of 1% solution in 5 seconds optimal. If injected too rapidly, more Brevital will be required, and transient apnea may be produced. The Brevital syringe is then removed and succinylcholine chloride is administered rapidly. Thirty seconds after termination of the injection of the muscle relaxant, the electric stimulation is given. In Indoklon convulsive treatment, the mask is tightly placed on the face and the bag gently squeezed as soon as the injections are finished.

Because of Brevital's ultra-short duration, the patients awaken much faster and are able to leave the treatment room much earlier than they could when thiobarbiturate anesthesia was used. It is also possible to treat a larger number of patients in a shorter period of time. In our series, one-third to one-half the amount of barbiturate was required to obtain adequate anesthesia. The small amount of Brevital used for anesthesia in conjunction with convulsive treatments, has hardly any ill-effect on the respiration of the patient. On the other hand, the larger amounts of thiobarbiturates

¹ 20 Franklin Rd., Scarsdale, N. Y.

² The Brevital Sodium used in this study was supplied by the Lilly Research Laboratories, Indianapolis, Ind.

which were required to obtain adequate anesthesia in electroshock, were a hazard because they increased the apnea which generally followed electroshock. We were also able to treat "poor risk" patients with cardiovascular disease, whom, in the past, we had been forced to treat without barbiturate anesthesia.

We gave Brevital anesthesia to 69 patients for succinylcholine modified electroshock or Indoklon convulsive treatments.³ Forty-seven patients had 158 electroshocks, and 22 had 105 Indoklon treatments. Two of our patients who suffered a moderately severe laryngospasm with Pentothal anesthesia did not have this side-effect when Brevital anesthesia was substituted. Some patients who complained of an unpleasant taste when given Pentothal anesthesia did

³ All treatments were given at West Hill Sanitarium, Riverdale, N. Y.

not notice this sensation with Brevital. Most patients showed less salivation with this oxybarbiturate anesthesia; thus the risk of aspiration was decreased. In some patients, Brevital reduced the electrical threshold, thereby enabling us to obtain a grand mal response with less voltage and time.

We found Brevital Sodium anesthesia to be the most useful anesthetic agent for electroshock and Indoklon convulsive therapy. It is ultra-short-acting, more powerful, and less toxic than other barbiturate anesthetics heretofore used. It is safe and easy to administer, and its use in convulsive treatment is recommended.

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COMBINED PHARMACO-FEVER TREATMENT WITH IMIPRAMINE (TOFRANIL) AND TYPHOID VACCINE IN THE MANAGEMENT OF DEPRESSIVE CONDITIONS

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There are three major limitations of the pharmacotherapy of psychiatric depressions: 1. The time lag between commencement of therapy and onset of therapeutic effect; 2. Owing to the former, difficulties in the management of acutely suicidal patients; and 3. The ineffectiveness of pharmacotherapy in a proportion of refractory cases.

In an attempt to overcome some of these limitations, artificially induced pyrexia was combined with the administration of imipramine (Tofranil). The rationale for this approach was based on the hypothesis that the therapeutic effectiveness of the drug was to some degree a function of its availability in the target organ and consequently depended on the blood-brain barrier which controls the access of pharmacological agents to the central nervous system. Electroconvulsive therapy and fever are two physical treatment methods which are

known to lower the blood-brain barrier and to facilitate the passing of chemical substances from the circulatory system into the brain and the surrounding cerebrospinal fluid (1, 2, 3). In this connection one may speculate that the "shock-saving" effect of imipramine which has been observed in patients receiving both pharmacologic and convulsive therapy may also be interpreted as a "drug-saving" effect of electroconvulsive treatments. In other words, a few induced convulsions may rapidly lead to therapeutic concentrations of the drug in the central nervous system through lowering of the blood-brain barrier.

Since fever therapy is a much less drastic procedure than electroconvulsive treatment in regard to its physiological and psychological effects, we chose it as the accelerating physical factor in the pharmacotherapy of depressive states. We had observed the usefulness of medically induced pyrexia many years ago in facilitating the therapeutic action of thiamine chloride

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in cases of atrophy of the optic nerve. We had also been impressed with the beneficial though transient effects of fever therapy in certain cases of schizophrenia. Whether induced pyrexia actually increases the concentration of imipramine in the CSF has not yet been directly tested because we know of no reliable method to determine the amount of imipramine in the CSF accurately.

In addition to the physiological rationale we intended to harness the empirically established anxiety-reducing effect of any type of fever in the therapeutic management of agitated and suicidal patients. Finally, we expected that the continuous observation of a suicidal patient would be much easier if the patient was confined to bed and required some nursing care because of a mild physical illness.

Pyrexia was induced with typhoid fever vaccine administered intravenously. Twenty-five million killed bacteria were injected the first time. Our vaccine preparation contained 250,000,000 killed bacteria per 1.00 cc. We diluted 1.0 cc. of vaccine in 9.00 cc. of distilled water and injected 0.1 cc. of this dilution into the cubital vein. The second injection consisted of 50,000,000 bacteria, the third of 100,000,000 and the fourth of 200,000,000. Injections were given on successive or alternate days. According to the initial reaction the second, third and fourth doses were sometimes varied above or below the usual progressive increase. Three to four treatments were given in most cases. The patient's temperature begins to rise 2 to 3 hours after the intravenous injection of vaccine. Sometimes an initial chill is observed and the patient may complain of headache. The temperature, as a rule, does not rise above 103° and more frequently reaches only 101-102°. It usually recedes to the normal level within 5 hours. Some patients are quite resistant to the pyrexia producing effect of the vaccine and require higher doses. Imipramine in doses of 50 mg. is given intramuscularly three times a day concurrently with the fever therapy.

Our results were encouraging. We treated 26 depressed patients with the combination of imipramine and artificially induced pyrexia. All patients were suffering from functional affective disorders, i.e., manic-

depressive, involutional or reactive depressions. Our criteria for a successful response were that the patients who had not received imipramine previously showed significant improvement within the first week of the combined imipramine-fever treatment or that improvement was noted within 2 weeks in those patients who had already been treated with the drug alone for 3 weeks without having shown any favourable change. In 15 of the 26 patients (58%) the combined pharmaco-fever treatment yielded these special criteria for a successful response. However, a successful response was more frequently obtained in those patients who had previously been refractory to imipramine therapy than in patients who had just been started on the drug. In other words, the combined pharmaco-fever treatment proved useful in cases who had previously been unresponsive to the drug alone but it could not be relied upon to the same extent to shorten the duration of the treatment. In a number of cases, however, distinct improvement was noted within a day or two of the combined therapy.

This was particularly gratifying in two out of three acutely suicidal patients in our series. One of these, a young woman, had been transferred to our hospital because she could no longer be managed in the psychiatric department of a general hospital where after a number of electro-convulsive treatments had been given she still persisted with the most determined attempts at self-destruction. On the first day in our hospital she tried to commit suicide on two occasions. She was immediately placed on pharmaco-fever therapy with imipramine and typhoid vaccine and her agitation and suicidal tendencies subsided with the first pyrexia. She was discharged recovered three weeks after admission. The other suicidal patient had been extremely tense and had been of considerable concern to the nursing staff because of several near-miss suicidal attempts in the past. While she still remained depressed for several weeks her tension and her suicidal drive were visibly reduced after the first two combined fever treatments and she no longer presented any problems after 4 treatments. Imipramine medication alone was then continued for

several weeks until complete remission had occurred. The third of our acutely suicidal patients did not improve and responded later to ECT.

It is our impression that the combined pharmaco-fever treatment with imipramine and typhoid vaccine merits a clinical trial in all cases of depression who present special problems because they fail to respond to the drug alone or because they are unusually tense and suicidal.

SUMMARY

Imipramine (Tofranil) therapy and artificial pyrexia obtained through the intravenous administration of typhoid vaccine in gradually increasing amounts were combined in the therapeutic management of special clinical problems encountered in depressed patients. Shortening of the time lag between the start of treatment and first significant improvement, a final favourable response in patients who at first had proved refractory to the drug and therapeutic control of acutely suicidal patients were the

criteria for successful responses. These special criteria were met in 15 of our 26 patients (58%) subjected to pharmaco-fever therapy. It is assumed that the mechanism which contributed to a favourable response include the physiological lowering of the blood-brain barrier with a resulting increase of drug concentration in the target organ. On the psychological side, the unspecific anxiety-reducing effects of pyrexia are noted as well as the facilitation of clinical and nursing management of acutely suicidal patients if they are confined to bed with a recurring fever of moderate degree.

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A COMPARISON OF PERPHENAZINE, PROKETAZINE, NIALAMIDE AND MO-482 IN CHRONIC SCHIZOPHRENICS

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Since the success of reserpine and chlorpromazine in institutionalized psychotic patients, new phrenotropic agents have become available for therapeutic trial. The initial encouraging report of the beneficial effect of iproniazid on blocked, regressed and apathetic schizophrenics, has initiated synthesis of new chemicals for clinical trial as psychoactivators. Many of these chemicals have the same property as iproniazid, that is, to inhibit monoamine oxidase and alleviate depression(1). Since the reports of the psychopharmacotherapeutic properties of available drugs are of wide range and varied, we have studied the pheno-

thiazines, perphenazine and proketazine, and the hydrazides, nialamide and MO-482 (1-1(2-phenylisopropyl)-1-methyl hydrazine).³ This evaluation was to determine the relative clinical efficacy of a new phenothiazine (proketazine) and a new hydrazide (MO-482) with compounds of known activity. In addition, we desired to better characterize the psychotic symptoms that may be alleviated with these two types of psychopharmacological agents, phenothiazines and hydrazides.

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³ The perphenazine used in this study was supplied as Trilafon by Schering Corporation, Bloomfield, N. J.; the proketazine by Wyeth Laboratories, Philadelphia, Pa.; the nialamide was supplied as Niamid by Chas. Pfizer & Co., Inc., Brooklyn, N. Y. and MO-482 (1-1(2-phenylisopropyl)-1-methyl hydrazide) by Abbott Laboratories, North Chicago, Ill.

METHODS

One hundred schizophrenics with an average duration of 10 years of hospitalization, were selected for this study. They were divided into 4 groups of 25 each. In each group there were about an equal number of (a) schizophrenics with Bleuler's secondary symptoms of delusions, hallucinations or dereistic behavior and (b) schizophrenics with Bleuler's primary symptoms of autism with detachment from reality, disturbances of affectivity and associational deprivation. Each group received either perphenazine, proketazine, nialamide or MO-482. The patients initially received the minimal oral therapeutic dose. The dosage was raised twice a week, either to an optimal beneficial level or to the maximal below that of untoward reactions. The daily therapeutic range was 16 to 64 mg. perphenazine, 50 to 600 mg. proketazine, 50 to 600 mg. nialamide and 10 to 100 mg. MO-482. If side effects occurred, the dose was reduced to a level at which they disappeared. After 12 weeks on this therapeutic range, the medication was gradually withdrawn.

RESULTS

The blood pressure of each patient was taken weekly during the treatment. A fall of 10 to 20 mm. Hg. in diastolic pressure was observed in 16 patients each on perphenazine and proketazine, in 9 patients on nialamide and in 12 on MO-482. One patient on perphenazine, 2 on proketazine and 2 on MO-482 had a fall of 20 to 30 mm. Hg. The remaining patients had a fall of less than 10 mm. Hg.

A sedative action by the phenothiazines or a feeling of well being by the hydrazides, was recognized as slight improvement. A reduction of hypermotility of thought and behavior with phenothiazines or a partial contact with reality and an interest in their environment with the hydrazides was interpreted as moderate improvement. With either group of drugs the disappearance of disorders of thought and affect, accompanied by integration of personality, signified marked improvement.

Improvement was observed in 11 patients on perphenazine, 11 on proketazine, 11 on nialamide and 7 on MO-482. Moderate to marked improvement was observed in 7

patients on perphenazine, 8 patients on proketazine, 3 on nialamide and 5 on MO-482. Perphenazine had slight to marked effect on the secondary symptoms of 10 patients and 1 patient with primary symptoms became worse. Proketazine produced slight to marked improvement in 7 patients with secondary and 4 patients with primary symptoms. Nialamide and MO-482 had the most beneficial effect on the primary symptoms of 10 and 5 patients and on secondary symptoms of 1 and 2 patients respectively. Three patients with secondary symptoms became worse with MO-482. One patient receiving 50 mg. proketazine died after 8 weeks of treatment. Autopsy revealed generalized arteriosclerosis and ischemic heart without histopathological evidence of drug reaction. Five patients on MO-482, 3 on nialamide, 1 on proketazine and 1 on perphenazine became disturbed. With reduced medication, they became quiet and showed clinical improvement. Two patients on proketazine became akathic. Rigidity appeared in 1 patient on perphenazine and 3 on proketazine. One patient on proketazine presented signs of generalized tremor and 1 patient receiving perphenazine complained of drowsiness. A syncopal attack was observed in 2 patients receiving MO-482.

DISCUSSION

The results indicate that the therapeutic efficacy of proketazine is about the same as that of perphenazine; the number of patients showing improvement with nialamide is larger than that with MO-482, but the clinical efficacy from nialamide is less than that observed with MO-482. Reserpine and phenothiazines in schizophrenics have been observed to counteract disorders of thought, hyperactivity or both(2, 3). Perphenazine and proketazine have beneficial effect in patients with delusions, hallucinations or with dereistic behavior. Nialamide and MO-482 are effective in disturbances of affectivity, autism with detachment from reality, associational deprivation and ambivalence of affect and will. Phenothiazines fall into a generalized category of psychoinhibitors and hydrazides into that of psychoactivators. Phenothiazines have sedative as well as antipsychotic activity. By nature of this dual activity, these drugs reduce

hypermotility of behavior, aberrant thought, and the accompanying emotional overflow (4). The monoamine oxidase inhibiting hydrazides have more energizing effect than stimulating and thereby induce a feeling of well being (eudaemonia). The psychoinhibitors are useful in alleviating hyperactivity, euphoria, delusions and hallucinations which are the side effects of the psychoactivators.

Phenothiazines, reportedly having high incidence of side effects, are among the most effective psychotherapeutic agents; our impression is that hydrazides follow the same pattern. Two of the 3 patients on nialamide and 2 of the 5 on MO-482 who showed secondary symptomatic disturbances improved after the discontinuance of treatment.

There was no correlation between the dosage and degree of improvement since patients require individualization of therapy.

SUMMARY

Of 25 chronic schizophrenics in each group on perphenazine and proketazone, 11

patients on each drug showed improvement. The patients with delusions, hallucinations and hyperactivity had the maximal benefit from these psychoinhibiting drugs. Of 25 chronic schizophrenics in each group, 11 improved with nialamide and 7 with MO-482. Seven patients on perphenazine and 8 on proketazone improved either to a moderate or marked degree. Moderate to marked improvement was seen in 3 and 5 patients on nialamide and MO-482 respectively. Apathetic and autistic patients had the maximal benefit from the psychoactivating drugs. These drugs are relatively safe as no serious untoward clinical or laboratory results were observed.

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ATROPINE-LIKE POISONING DUE TO TRANQUILIZING AGENTS

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Atropine-like poisoning as a side effect of tranquilizers has been mentioned, from time to time, by some drug companies. Mahrer, Bergman, and Estren² reported an atropine-like poisoning reaction in a patient treated 6 weeks with Pacatal and Compazine. The reaction was concomitant with the rise of atmospheric temperature and humidity.

Mild anticholinergic reactions such as constipation, blurring of vision, dryness of mouth and skin, are very common side-effects of tranquilizers. The severe anticholinergic reaction (atropine-like poisoning reaction) in the case mentioned above, was thought to have resulted from synergistic reaction of Pacatal and Compazine.

We have recently observed such atropine-like reaction in a patient treated with Nardil (phenylethylhydrazine) and Tofranil (imipramine hydrochloride).

C. V., a 55-year-old white female was admitted to our hospital for the third time in May 1960, because of depression, self depreciation and guilt feelings. Her case was diagnosed involuntal depressive reaction. On May 10, she was put on Nardil—15 mg. q.i.d. but there was no significant response. On May 23, she was put on I.M., Tofranil—25 mg. t.i.d. Twenty minutes after receiving the first injection, the patient became agitated, tremulous and delirious. This was followed by generalized clonic convulsions and hyperthermia of 105.8° F. Physical findings revealed flushed face, warm dry skin and dry mouth. Pupils were dilated and not reacting to light, pulse 200/min., respiration 30/min. There was

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²*Am. J. Psychiat.* : Oct. 1958.

no response to pin prick or other stimuli. Other physical and neurological findings were negative.

Patient was treated with Aspirin, I.M. sodium amytal, and I.V. fluids. She was also covered with a wet sheet upon which 2 fans were directed. In 4 hours the temperature came down to 100.5° F., the convulsions stopped and patient started to respond. After 12 hours her temperature was down to 99° F., her pupils were still somewhat dilated and did not react to light until 48 hours later.

Laboratory studies of urinalysis and CBC, on admission and on 2 consecutive days after the reaction, were within normal limits. An EEG taken 2 days following the reaction, was normal.

DISCUSSION

Since it is not yet fully known how various tranquilizers and energizers work

synergetically, it is difficult to ascertain if the reaction (a) was due purely to Tofranil which, though an energizer, has a chemical structure similar to phenothiazines, (b) if it was due to synergetic action of Tofranil and Nardil (monoamine oxidase inhibitor) or (c) if it was due to any idiosyncrasy on the part of the patient.

Two years ago we had another patient who developed a similar reaction to a combination of Pacatal and Sparine (both phenothiazines). The case was not reported.

The present case is being reported in order to caution the simultaneous use of various tranquilizers and energizers and to emphasize the need of further research in this area.

CLINICAL AND THEORETICAL OBSERVATIONS ON PHENELZINE, (NARDIL¹), AN ANTIDEPRESSANT AGENT²

CAPTAIN ROBERT A. COLE, AND CAPTAIN MYRON F. WEINER³

Apathy, anergy, withdrawal, and depression are symptoms of many functional and organic central nervous system disturbances. Frequently, psychotherapy alone does not produce sufficient, or sufficiently rapid improvement. In this situation, drug therapy seems to be a logical primary or adjunctive treatment.

Phenelzine inhibits the *in vivo* action of monoamine oxidase, an enzyme found in greatest concentration in brain tissue in the hypothalamus and brain stem. Monoamine oxidase oxidizes a number of monoamines, including serotonin, at a rapid rate and has a distribution in the brain corresponding to that of serotonin. Monoamine oxidase inhibitors have been of value in states characterized by psychic and physiologic depression. Although there is no unequivocal

proof, it might be postulated that a state of relative serotonin deficiency exists in certain areas or pathways of the brain. Rhythmic, pulsatile activity has been seen in oligodendrocytes in tissue culture. There is evidence to indicate that oligodendrocytes may participate in the removal of CO₂ from the environment of the active neuron, that their function may be related to the formation and maintenance of myelin, or that they may act as "insulators" of synaptic areas on the surface of neurons. These data indicate that oligodendrocytes may be important in the process of active neural conduction. The rate of pulsation of oligodendrocytes in tissue culture increases when serotonin is added to the culture medium. Reserpine, which reverses or counteracts many of the physiologic effects of serotonin, has been known to produce depressive symptoms. Reserpine-like substances decrease the rate of pulsation of these cells, thus demonstrating a physiological activity correlating with a corresponding change in psychological activity.

The ability of phenelzine to "energize" apathetic patients and to counteract depres-

¹ Trade Mark, Warner Chilcott Company.

² Presented February 5, 1960, at the Third Annual Meeting of Air Force Internists and Allied Specialists, USAF Hospital, Lackland, Lackland Air Force Base, Texas.

This paper represents the personal viewpoints of the authors and is not to be construed as a statement of official Air Force policy.

³ Psychiatry Service, USAF M.C., USAF Hospital, Lackland, Tex.

sion was evaluated clinically by the authors. On the basis of the signs and symptoms of apathy, anergy, withdrawal, and depression, 31 patients were selected. Included in the group were 14 cases of neurotic depression, 4 cases of chronic brain syndrome with depression, 2 cases of involutional melancholia, 8 depressed schizophrenics, and 3 non-depressed schizophrenics. There were 14 males and 17 females, both inpatients and outpatients, ranging in age from 17 to 59. The mean duration of symptoms was 15 months, with a range of from 1 week to 6 years. Periodic physical and mental status examinations, liver function studies, and routine hematologic studies were done. The degree of improvement was estimated both clinically and by the subjective reports of the patients. The drug was administered for periods up to 6 months in doses ranging from 15 to 45 mg. per day. Usually, 15 mg. was given t.i.d. for 1 to 4 weeks, followed by a gradual reduction to a maintenance dosage of 15 mg. per day. No external controls were used. Many of the patients served as their own controls, having previously undergone prolonged trials of therapy.

Sixty-eight per cent of the entire group showed improvement. In general, some signs of improvement were shown during the first week of treatment. The symptoms of withdrawal, anergy, apathy, depression, weight loss, anorexia, agitation, somatic complaints, and insomnia were rated individually. With the exception of agitation, each symptom showed improvement commensurate with the overall rate of improvement. There was no correlation between duration or severity of symptoms and response to phenelzine. None of the non-depressed schizophrenics improved. No abnormality of hematologic or liver function studies occurred. Side effects consisted of one case of marked euphoria, two cases of severe agitation, one case of transient severe headache, one case of transient insomnia, one case of a single missed menstrual period, one case of transient ankle edema, one case of postural hypotension and a "drugged" sensation, and 4 cases of a spontaneous decrease in smoking. The case of euphoria responded to a reduction in dosage. Increase in agitation generally responded to chlorpromazine, 100-200 mg. per day.

A COMPARATIVE CONTROLLED STUDY WITH CHLORDIAZEPOXIDE¹

MARSHALL E. SMITH, M.D.²

Three distinct studies were undertaken with a new psychotherapeutic agent, chlordiazepoxide, in the treatment of psychotic and/or psychoneurotic patients. The first, a pilot study on 10 chronic schizophrenic patients, established the drug's safety and calming effect with a lessening of anxiety, and provided information as to dosage and onset of action.

With this knowledge the second study was initiated, a comparative blind evaluation employing 3 groups of 15 patients each, matched as to age (average 41 years), duration of illness (average 12.5 years) and predominant symptomatology (chronic schizophrenia in 37 and manic-depression in 4).

Group A received placebo; Group B, chlorpromazine; Group C, chlordiazepoxide. Two patients from Groups B and C were lost from the study for reasons not connected with drug administration. Medications were identical in appearance. Initial dose was one capsule (50 mg. of active material) t.i.d. with increases of one capsule every three days until a total of 12 to 14 capsules per day was reached. Increments depended on therapeutic response and absence of side effects. The study lasted for 14 weeks. Evaluation was based on general impressions of the observers and on a rating behavior scale.

Five categories were formulated to indicate results of treatment: maximal—complete disappearance of symptoms and ability

¹ Librium, Hoffmann-La Roche Inc., Nutley, N. J.

² 124 Whitfield St., Guilford, Conn.

to participate in the hospital treatment program; moderate—partial disappearance of psychotic symptoms and change in behavior; minimal—no change in symptoms but partial change in behavior; no change; and worse—psychotic symptomatology more apparent and behavior more uncontrolled.

Results were maximal in 1 patient receiving chlordiazepoxide; moderate in 1 patient receiving chlorpromazine and 2 who received chlordiazepoxide; minimal in 5 of the chlordiazepoxide group. Thus improvement occurred in 8 patients on chlordiazepoxide therapy, 1 patient on chlorpromazine therapy and none of the patients on placebo medication. There was no change in 5, 8 and 5, respectively, in Groups A, B, and C. Ten patients became worse on placebo, 4 and 2 respectively on chlorpromazine and chlordiazepoxide.

Side effects in patients who received chlorpromazine in doses above 400 mg. daily were: extrapyramidal stimulation in 4 and ataxia in 3. In patients receiving chlordiazepoxide in doses above 600 mg. daily (20 times the recommended dose), extrapyramidal stimulation was seen in 4 and ataxia in 2, while 2 patients experienced hypermotor activity on 150 mg. daily. Routine laboratory studies performed at 2-week intervals revealed no toxic effects on the liver, blood or kidneys in any patient.

In the third study, an additional 143 patients, including 87 chronic schizophrenics, 31 acute psychotics and 25 psychoneurotics, were treated with chlordiazepoxide for from 12 to 20 weeks and the patients followed up to 8 months. Using

the same criteria for evaluation as in the blind study, varying degrees of improvement were shown in 65 or 74.7% of the schizophrenics, 11 showing no change, and 11 becoming worse; in 17 or 54.8% of the acute psychotics, 5 without change, and 9 worse. In 7 of the 11 patients with anxiety reactions the response observed permitted them to enter into psychotherapy. A marked response was noted in 3 of 6 obsessive-compulsives and a good response in 3 of 6 patients suffering from neurotic depression. In the latter 3 patients a great deal of anxiety and agitation was coupled with depression, while the 3 who did not respond did not initially demonstrate a great deal of tension and anxiety.

Two patients with psychophysiologic gastrointestinal disturbances became asymptomatic after 1 and 5 weeks of therapy respectively, and have remained asymptomatic for 5 and 8 months following its discontinuation. At doses ranging from 250 mg. to 400 mg., considerably higher than those used by earlier investigators, the side effects observed were: ataxia, 9, extrapyramidal stimulation, 7, hypermotor activity, 6; and ataxia and extrapyramidal symptoms, 3. When the dose was cut in half the hypermotor activity decreased in 72 hours in all cases.

Chlordiazepoxide was found to be an effective agent for the relief of anxiety and tension with an associated improvement in social behavior. Patients entered into treatment and ward activities more readily and in most cases were more accessible to therapy.

PRELIMINARY REPORTS

A PRELIMINARY REPORT ON THE USE OF STELAZINE AND PARNATE IN CHRONIC REGRESSED AND WITHDRAWN PATIENTS

HARBHAJAN SINGH, M.D., AND RICHARD M. FREE, M.D.¹

In order to ascertain the value of using energizers in treating chronic schizophrenic patients, various studies have been conducted but the results have been somewhat contradictory and inconclusive.

The use of new potent phenothiazines, Stelazine (trifluoperazine) and Prolixin (fluphenazine) in treating regressed and apathetic chronic schizophrenic patients has been somewhat promising.

The aim of this study was to ascertain the effects of one of the most potent antipsychotic tranquilizers (Stelazine) and a potent psychic energizer (Parnate)² in treating chronic withdrawn apathetic patients. The subjects in this study were 25 (12 males and 13 females) withdrawn, apathetic, regressed, chronic patients selected on the basis of having been treated in the past with various tranquilizers, including Stelazine, but having shown no improvement, whatsoever. Their immediate environment, ward placement and participation in hospital activities were kept as nearly the same during the study as before. Each patient was kept off all medications for at least one month before starting the study. By this manner of selection, it was hoped that the patients would act as their own controls. This preliminary study lasted for 6 weeks.

Patients' ages ranged from 28 to 75 years with a mean age of 50.1 years. They had been hospitalized continuously from 2 months to 35 years with an average hospitalization period of 12.9 years. Their official diagnoses varied as follows:

Schizophrenia, all types	14
Manic-depressive Depressed	3
Manic-depressive Manic	1

Mental Deficiency with Psychosis	3
Mental Deficiency with Behavioral Reaction	1
C.B.S. with Huntington's Chorea	1
C.B.S. with Alcoholic Deterioration	1
Psychoneurotic Reaction, Depression	1

PROCEDURE

All patients were started, simultaneously, on Stelazine (2 mg. b.i.d. or t.i.d.) and Parnate (10 mg. t.i.d.). Weekly dosage adjustment of only one drug was attempted at a time, first with Stelazine until optimum dosage, or a dose of 5 mg. b.i.d. was reached. After this, adjustment of Parnate was tried up to optimum level or maximum dose of 20 mg. q.i.d. All patients were told that they were going to be treated with a new drug which might help them. Laboratory studies consisted of weekly estimation of C.B.C., sedimentation rate, Alkaline phosphatase, and urinalysis. Blood pressures were recorded twice weekly except as otherwise indicated.

Evaluations were made weekly. Patients were rated as "much improved," "improved," "same," and "worse" depending on collective agreement of the doctor, nurse, and patient.

The points stressed in rating were: lessening of psychomotor retardation, more socialization, manageability, display of affect and interest, and decrease or disappearance of hallucinations and delusions.

Eight of the 25 patients had to be taken off the study because of severe hypotensive reaction (4), increase in Alkaline phosphatase (3), and acute psychotic excitement (1).

At the end of 6 weeks the final ratings were as follows:

Much improved	4	23.5%
Improved	9	52.9%
Same	2	11.7%
Worse	2	11.7%

¹ Chief of Admission & Intensive Area & Director of Education & Research, respectively, Mental Health Institute, Independence, Iowa.

² Trifluoperazine & S.K.F. 385 (a new mono oxidase inhibitor) supplied by S.K.F. Laboratories.

Treatment with Stelazine and Parnate seems to have been helpful in all diagnostic categories tried in this study. All of them, however, had common denominators: chronicity and withdrawal. In the "much improved" category there were 2 schizophrenics, 1 mental defective with psychotic reaction, and 1 manic-depressive manic. In the "improved" category there were 5 schizophrenics, 2 manic-depressive depressed, 2 mental defectives with psychosis. In the "same" category both were schizophrenic patients, while the "worse" category had 1 schizophrenic patient and 1 C.B.S. with Huntington's Chorea.

Mild side effects noted included agitation, insomnia, akathisia, drowsiness, difficult micturition and hypotension.

SUMMARY

The combination of a very potent tranquilizer and an energizer was tried on 25 chronic regressed, withdrawn, patients with various diagnoses. Eight of the patients had to be dropped from the study because of complications. The results of the present pilot study are promising; however, the above-mentioned combination of drugs requires further trials and research before more definitive conclusions can be reached.

HISTORICAL NOTES

GEORG ERNST STAHL (1660-1734)

ERNEST HARMS, PH.D.¹

Like Paracelsus, Georg Ernst Stahl is better known for what his contemporaries and later medical writers said against him than for what he himself represented. However, he was undoubtedly one of the most influential medical theorists of his time, and as is usual, he was attacked as an enemy of the point of view of his attacker. To the materialist of his day he was a pietist, and to the spiritualist he was a materialist. Actually he was neither. He was a most radical realist with an amazing differential sensitivity which placed him on a new, higher level between the two major camps. True, he was difficult to understand. He wrote a baroque Latin mingled with contemporary German expressions. If we did not have the admirable translation of his *Theoria Medica Vera* by the psychiatrist Karl Wilhelm Ideler, in the beautiful and lucid German of a Romantic essayist, we would be hopelessly lost in trying to understand him. In this remarkable Germanization, the brilliance of Stahl's basic deductions becomes wonderfully clear.

As Paracelsus once stood up against the alchemistic metaphysicists and tried to clear the air for the formulation of natural scientific laws, so Stahl stood up against the "man a machine" mechanistic materialism of his age. He applied his rationalistic thinking to the differentiation between matter and organism: A living organism cannot be only mechanically functioning matter; the body begins to disintegrate at the moment of death; life must be an addition to matter. This additional element Stahl designates as "*animus*," which, however, is not a deistic spiritual element but a "*motus*," as he calls it in his Latin, a movement, a dynamic element—which was, in the following century, designated as "*psyche*." The Ger-

man medical historian Kirchoff believed that it was identical with Hippocrates' "*physis*." The placing of the human psyche "between heaven (not spiritual) and earth (not a physiological element)," as he himself expresses it, is the great achievement of Stahl. Despite the claims that the psychoanalytical concepts of this century were the first to have developed the dynamic aspect of psychology, its real discoverer and first representative was G. E. Stahl. Stahl's starting point was the need for a clear teleological concept as the basis of human existence; the final result was what, in its most modern form, C. G. Jung has formulated as the human psyche as a closed unit of a dynamic system. It was especially this clear and systematic thinking that accounts for Stahl's great influence, which during his time extended all over Europe.

To be historically objective one must hand to Paracelsus the palm for having initiated psychotherapy by his demand that the insane be viewed not as persons possessed by the devil and punished by God, but simply as sick human individuals. But Stahl's influence on the development of psychiatry was no less great, since he was the first to demand concrete psychological treatment. Although hardly a practitioner in the care of the insane, one of his most important writings, his *De Animi Morbis* (1708), was devoted to psychiatric treatment methods. He clearly distinguished between mental diseases resulting from actual bad behavior and those physiologically conditioned, among which delirium was for him the most characteristic. He also clearly differentiated between psychosomatic and somato-psychological influences. The latter, normal functions, he described in great detail in his more scientific version of the old concept of the four temperaments. He saw *animus* functions as influencing the body psychosomatically in a dual way, by contracting and extend-

¹ Editor of *The Nervous Child*, 30 West 58th St., New York 19, N. Y.

ing—a concept that attained its classical form in Goethe's "systole and diastole." Abnormal functioning of the *animus* is the major cause of all insanity. Kirchoff correctly pointed out that the first clear psychiatric differentiation—Langermann's diopathic and sympathetic mental ailment—goes back to this concept of Stahl's. There can be no doubt that the great psychiatrists of the

past century—Reil, Heinroth, and Griesinger—were profoundly influenced by Stahl, who was their major source of thought. When the history of psychiatry matures to become an objective survey and not merely the history of this or that school of psychiatric thought, it will have to recognize Georg Ernst Stahl as one of the four great fathers of psychiatry.

POEMS

PERFECTION AND RETREAT

by EARL D. BOND, M.D.

A Gentleman

A gentleman, the soul of honor
Preferred the rose
Because of its thorns
Preferred to punish himself
And incidentally others
Pleasures for him
Were three parts pain
A knight, he fought for truth
Rather than for men and women
Fearful, he did brave things
Weak, he became strong
To endure, to grasp, to suffer

Never was he satisfied
Until too soon
He broke his lance
Against astonished Death
And ended gratefully
A dutiful existence

"Excelsior"

He knew frustration all his life
And while he raged at compromise
He had to deal with men less wise
And could not find a perfect wife

And when he tried to write a book
He could not get beyond page one
So much there was still to be done
A point he could not overlook

Poor boy, he thought that he was right
To climb a mountain late at night
A snowdrift cooled the fevered quest
Of one who gave up good for best

The Next Step

Let the dull crowd climb
I remain
In my own perfection
In my own province
Where I make the rules
Reject the burden
Take the dream
Not unhappy as I sleep

Across a gulf
Hands stretch out
I almost pity them
From my nest
Beneath the heart

Lover and loved
Subject and object
In the clear pool
I see myself
Safe from
The next step

Perfectionist

I follow a star that is
Above the heads of men
Athirst I stoop to drink
And the water recedes
My lips never touch completion
Always Alpha, Alpha, Alpha
Never Omega period finis end
Too much becomes too little
Is there some fault
That makes perfection perfect?

Infant-Adult

Mother and Wife and Nurse
 Three in one
 She feeds me
 Wheels me
 With other babies
 On the Boardwalk
 She is my slave
 "I toil not, neither do I spin"
 Ruler of a tiny realm
 Master of Time
 Secure in my dependence
 Powerful in my weakness
 To some extent, I live

Double Denial

"Buy me golden shoes, Mother,
 And a servant to make them shine."
 "You shall have what you choose, My Son,
 Because you are wholly mine."

 "Give me your house and lands, Mother,
 Give me a coach and four."
 "I place them in your hands, My Son,
 I wish I could give more."

 "Tomorrow I must die, My Son,
 Comfort me while I live."
 "Why should I answer your cry, Mother,
 When you have nought to give."

Without Love

Love's substitute, ambition grew
 He worked all day and grudged his
 sleep
 At times he worked the whole night
 through
 Such toil as made the angels weep

 And when he reached his pinnacle
 The goal to which his labor led
 He faced the inadmissible
 And put a bullet through his head

Queen

The Queen of beauty
 Withdrew to her castle
 On a lonely hill
 Where all winds moaned
 And no children played

 Around the house
 Tiny graves for those children
 Who never were
 No people came
 But many ghosts

 Her disciplined thoughts
 Never strayed
 Beyond the walls
 No sorrow, no grief
 Embedded in the amber
 Of her self sufficiency

COMMENTS

RANDOM REFLECTIONS

After a period of a generation or more in psychiatry, one is tempted to interrupt the lively present with "flash-backs" to earlier decades. As a budding medical man the "roaring twenties" fascinated me, —the feverish thirst for new knowledge and a better way of life that usually follows great wars. In the young discipline of psychiatry it took the form of rooting out the evil "id" from man's unconscious. Evil was in-born to our Victorian parents as they looked around at the cruel sweat shops, the slums, and the worshipping of money as though it had personality in its own right. To be sure, doctors in the twenties along with everyone else were making money in the booming market, but it was mostly an adventurous game plus a spirit—of general rebellion against the old status quo with its sticky and over-rigid conformity patterns.

Another "flash-back," to the next decade, sees these same doctors seriously discussing their professional futures through the smoky glasses of the economic depression. Those of us in teaching positions literally had to snatch live bodies from the charity clinics to teach with before the local medical society could declare these people "out of bounds." They could afford to pay \$.25 a visit to their family doctor, so what right had they to be treated free in the tax-supported general hospital! Indeed, the thirst for new knowledge in this decade was peculiarly lacking, or so it seemed, except for the few whose livelihood depended on research along with their teaching.

The favored ones in those days, including doctors, were those on salary. In that bitter day most people were more concerned with holding onto their jobs for bread and butter than with the advancement of knowledge. Visits to veterans hospitals before the period of re-vitalization of the Veterans Administration following World War II were depressing indeed. Many doctors in our public institutions who got their jobs more through "pull" than skill slept at staff conferences and made little or no contribution

to the advancement of the specialty. It was heart-breaking for the few dedicated career doctors in these organizations. It was in general a dull, contracted constipated era.

Flash-back Number Three!—The post-war mid-forties found doctors pouring out of armed services full of ambition and idealism to practice the kind of comprehensive medicine they had enjoyed in the better Army hospitals and clinics where the sick soldier had the benefit of specialists pooling their knowledge in practically all fields for his benefit. I watched these same doctors as they came home eager to do the same for their civilian patients. It was a joy to feel their enthusiasm and to know that they truly held the practice of good medicine above other considerations, whether that was solo practice in rural areas or some form of group practice in the city.

Flash-back Number Four!—Medical needs of the public had so piled up during the war that every doctor soon found his office swamped with patients. Money seemed of little consequence to the latter. An appointment with their doctor was all that mattered. The doctor had to meet this civilian emergency the best he could. Coronaries as well as money came more readily to doctors than ever before,—big cars, big suburban homes, but with little time to enjoy them or the wives and children who lived in them. Many of these over-worked physicians expressed deep concern over the situation. Not enough doctors were available to help them handle the loads much less do the kind of job they had hoped to do. Many of these able men would have taken full time teaching and research positions had enough medical school openings existed. More and more hospitals were built and fortunately more and more doctors' buildings erected where the practitioner and the specialist could confer and at the same time advance each other's knowledge. The financial situation of the country was such that had there been twice the number of psychiatrists in

private practice their offices too would have been filled with patients apparently willing and able to pay their doctor as well as the mounting costs of hospitalization. This busy period of lush practice enabled both doctor and patient to profit by a wave of comprehensive medical practice never seen before. Contrary to some savants whose opinion I respect, the Money-happy Fifties have not really left the medical profession less of a "profession" and more of a "trade." Doctors have been blamed for a situation they did not create and could not by themselves change. A great depression and a World War left powerful repercussions.

Contemporary 1960's!—No recession is yet in sight but thoughtful doctors are worried about their profession. Can it meet the needs of the future? In spite of doctors' large incomes there are fewer applicants for medical school and fewer "A" students in proportion applying, if we take the country as a whole. All traditional fields of graduate work, I understand, are having recruitment problems. New alluring fields are now competing for the able student, offering prestige as well as earlier financial returns. A few more medical schools are opening, but hardly enough to catch up with our expanding population. Doctors are as busy or busier than ever. As neglected post-war medical needs were met and new insurance plans developed, the public's appetite for more and better medical care resulted. As Ford's higher wages policy enabled workers to buy more automobiles, it also bought more medical care. Higher wages for laborers often carried with them health insurance benefits which pay up to \$10,000 for prolonged illnesses. But woe to the white-collared man today who does not work for such a firm! One prolonged mental or physical illness can take his house and automobile away.

In time this will be remedied we hope by voluntary health insurance, or certainly by some equally efficient as well as economical system of medical care. In the meantime, however, there are and will be for some time ahead a large number of respectable people who cannot afford private medical care and yet do not want to feel they are therefore second class citizens. Doctors cannot alone remedy this situation. They

cannot help with the high cost of hospitalization. While private and public insurance agencies are working out these basic problems, doctors, bankers and hospital administrators could help make this transition period much less catastrophic for this important segment of our citizenry. Nowhere in the private practice of medicine is this so-called two-class society more in evidence than in psychiatry. There are far too few private practitioners of psychiatry in this country as a whole to solve the problem. Many large communities never had a psychiatrist in private practice until after World War II. The practice of psychiatry in the community is young with tender shoulders. Nevertheless, there are some things we might be able to do besides making our prices reasonable, as was again urged on all physicians recently by Dr. Louis M. Orr, Retiring President of the A.M.A. It is not charity from doctors that people want, but some organized resource whereby one can at least see a doctor when he is most in need of one at fees geared to his pocket book.

In this regard there is an interesting experiment in cutting down the waiting list in a child guidance clinic with which I am acquainted. Private psychiatrists might do some similar experimenting along these lines. This clinic decided to open a Thursday afternoon emergency psychiatric examination clinic for parents and their problem children. After an intake interview by a skilled social worker, both child and parents were seen first together then separately for the first hour. A conference was then held by the psychiatric resident and social worker with a senior staff person as consultant* and recommendations agreed upon; then a final session with the parents with or without the child present, and the examination was dictated for the record.

This afternoon clinic cut the traditional treatment waiting list of the clinic to less than half. It did more than that. The clinic was able to refer half of these cases to other agencies in the community for help, with the clinic staff offering "stand by" consultation service when needed. The families so referred felt satisfied with such an examination and were reported to have cooperated well with the other agencies to whom they were referred,—such as visiting

teachers, family welfare agencies, pediatricians, *etc.* In one month three adolescents with incipient schizophrenia were referred to hospitals, two having full health insurance coverage through their fathers' firms for private hospital treatment. Incidentally they were previously unaware of this kind of coverage.

Today when some psychiatrists are deliberately taking extra time off to cut income, adaptation of this or some other plan to their own way of working could render crucial help to many at the time when an expert appraisal of their problems is most needed. Needless to say the referring family physician is always grateful for such examination and recommendations. With the community paying the salary of the social workers, fees taking care of the overhead,

and each psychiatrist volunteering two hours of time each week, I see no reason why such an examination and referral service by psychiatrists in private practice could not be put into operation. Unfortunately creative ideas and good motivation often go to waste for lack of proper machinery to express them. Here is where experts in psychology, social work and community planning could help us.

Let us not wait for others with less training in the social side of medicine to act for us as they might do all too quickly. Where the need is made evident may we not assume that psychiatrists in private practice will be found willing to sacrifice a lucrative afternoon in their offices to give clinic service such as outlined?

S. S. A.

INTOLERANCE

The intolerance of old age is matched by the intolerance of youth. The cure for the former is the memory of one's past. The only cure for the latter is contained in the sad experiences which no generation can escape.

—C. CHARLES BURLINGAME

CORRESPONDENCE

GENETIC FACTORS IN SCHIZOPHRENIA

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY:

SIR: The good article in the May issue, "Genetic Factors in Schizophrenia," by Dr. Ian Gregory, indicates that, although there is suggestive evidence that heredity may play some role in the etiology of this disease, the studies published up to the present fail to support the hypotheses advanced as to a specific genetic mechanism. These studies have all dealt only with overt schizophrenia and treated it as a single condition rather than the group of diseases Bleuler hypothesized may exist. As a partial antidote to the pessimism which this invalidation of previous work may engender, I wish to note an alternative approach which has proved more rewarding in the study of other human diseases. (I have drawn heavily from the ideas of Neel, J. V., expressed in *Am. J. Hum. Genet.* 7: 1-14, 1955, and in *Medicine* 26: 115-153, 1947.)

In a number of diseases, a variation from the normal so mild as not to be called illness has proved in the study of pedigrees to be rather easily fitted into the small whole number ratios of classical genetics, while the morbid condition which was an exaggeration of the minor variation appeared in a distribution which was genetically meaningless. Using gout as one of various possible examples, with elevated blood uric acid as the minor variation, elevation appeared in the parents, siblings, and children of individuals with elevations in numbers approximating the 1:1 ratio which suggests a single dominant gene almost completely penetrant. Appearance of gout in these families was sporadic, meaning that

if overt disease had been the criterion studied, the genetics of this disease would be no better understood than that of schizophrenia.

"Schizoidness" or various partial components of the schizoid personality may well be more consistent with gene behavior than schizophrenia. The problems immediately arise as to which traits are exclusively schizoid, as to where to draw the line between abnormality and normality for any component trait, and as to whether these traits may be determined by environment. It seems to me unnecessary, even undesirable, to decide which component traits on which to concentrate prior to the collection of pedigree data. Possibly it could be found that some indices behave as if inherited, others as if learned (as, for example, almost always present if present in mother but seldom present if present in father), while still other indices would lack predictability. Among indices which could be tested are various facets of mental status, developmental history, psychological test items, and physiologic measurements. Discovery of even one index which behaves like a gene would be a step toward an etiologic classification of mental illness from the present descriptive classification. As an index of susceptibility, it would be a help to researchers attempting to determine what environmental factors promote or hinder development of overt schizophrenia(s).

Willard S. Schwartz, Jr., M.D.,
Resident, Western Psychiatric
Institute and Clinic,
Pittsburgh, Pa.

REPLY TO THE FOREGOING

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY:

SIR: Thank you for the opportunity to comment on the letter from Doctor Schwartz

concerning my recently published analysis of genetic factors in schizophrenia.

It is true that certain disorders (such as gout) may be irregularly manifested among

a larger group of individuals having a metabolic anomaly attributable to single gene inheritance. It is not quite correct, however, to state that all genetic studies on schizophrenia have hitherto dealt only with overt schizophrenia and ignored the possible transmission of more widespread latent "schizoid" tendencies.

Kallmann has postulated that the potentiality for overt schizophrenia is inherited as a simple autosomal recessive unit characteristic with incomplete penetrance and expressivity (determined by a genetically non-specific constitutional defense mechanism). He also speculates that both homozygotes failing to manifest overt schizophrenia and individuals heterozygous for the pathological gene (who must number 20 to 25% of the general population to conform with this theory) may have either a schizoid or normal type of personality, and that the principal genetic derivation of involutional psychosis is from the schizoid personality.

There are many reasons why the majority of human geneticists are not prepared to accept simple formulations of this nature concerning the possible contributions of heredity to the etiology of most common psychiatric syndromes such as the schizophrenias. Clinical psychiatric diagnoses, for example, are not sufficiently precise—both

American and British studies indicating about 30% disagreement between major diagnostic categories used to describe the same patients in different but nearby hospitals.

The complex data that have accumulated appear to preclude any single gene hypothesis of causation for either (a) all varieties of overt schizophrenia or (b) any larger category (schizoid or other), a certain proportion of which included all varieties of overt schizophrenia. Three alternative hypotheses (that are *not* mutually exclusive) were considered briefly in my article: 1. Predominantly environmental causation, 2. Genetic heterogeneity, 3. Polygenic inheritance.

The improbability of a single gene basis for the whole of "schizophrenia" (or of "schizoid personality") does not exclude the possibility that genetic factors may be important or even essential determinants of at least some varieties of schizophrenia. The current lack of certain knowledge should stimulate the search for more objective diagnostic criteria, and their application in extensive family investigations.

Ian Gregory, M.D.,
Department of Psychiatry,
University of Minnesota.

URINARY EXCRETIONS

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY:

SIR: I read with great interest the paper of F. Christine Brown, Ph.D., J. B. White, Jr., B.S., and J. K. Kennedy, M.D. about the "Urinary Excretion of Tryptophan Metabolites by Schizophrenic Individuals."

In 1927 and 1928, E. Scheiner, M.D. published two papers, entitled "Reazione nera (Buscaino), reazione dell' uroscina, reazione di Millon nell' urina di amenti e dementi precoci" and "La Reazione di Millon nell' urina delle psichosi tossiche," in which he stated that the urine of schizophrenics has an increased content of aro-

matic amines. My superior at that time, Prof. Wagner-Jauregg asked me to check Dr. Scheiner's findings and I obtained the same results as Dr. Brown, J. B. White, and Kennedy with the methods available at that time, namely that there is no increased urinary excretion of aromatic amines in schizophrenia. My findings were published in the *Jahrb. f. Psych. & Neur.*, Vol. 47, P.1, in an article entitled "Ueber die von Scheiner angegebenen vier Harnuntersuchungsmethoden."

Edith Klemperer, M.D.,
New York, N. Y.

DYNAMIC ORIENTATION

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY :

SIR : Dr. Mark Stewart's letter about posts requiring a "Dynamic Orientation" from applicants says something that long needed saying. But this is not the only unfair practice that our Association tolerates. For many years appointments to academic posts in psychiatry, psychology, and social work have been made, openly or tacitly, only to those who have completed a personal analysis. Karl Jaspers¹ drew attention to this violation of academic freedom. Needless to say, someone who dissented from the main doctrines of psychoanalysis would not be regarded as successfully analysed.

Furthermore, scepticism about the value

of psychotherapy is regarded by some as disloyal, and its expression has been seriously proposed as punishable by our Association. This is not the attitude of mature men, sure of the basis of their convictions. Criticism of physical methods of treatment by contrast is acceptable and even praiseworthy.

What a stroke of salesmanship was the appropriation of this word dynamic! Freud's deterministic system, with the timeless unconscious and the repetition compulsion, should much more appropriately be called psychostatics. Dynamic seems a more suitable adjective for psychiatrists who emphasise the individual's creative possibilities, and his power to synthesise new ways of living, unpredictable from his past.

Elliott Emanuel, D.P.M.,
Dorval, Que., Canada

¹ *Nervenarzt*, 1950, 21 : 465. Quoted in *Lancet*, 1951, i, 459.

CARRYING ON

Man continues to live because he is a living creature, not because reason convinces him of the certainty or probability of future satisfactions and achievements. He is instinct with activities that carry him on. Individuals here and there cave in, and most individuals sag, withdraw and seek refuge at this and that point. But man as man still has the dumb pluck of the animal. He has endurance, hope, curiosity, eagerness, love of action. These traits belong to him by structure, not by taking thought.

—JOHN DEWEY

INTELLIGENCE

It is customary among a certain school of sociologists to minimise the importance of intelligence, and to attribute all great events to large impersonal causes. I believe this to be an entire delusion. I believe that if a hundred of the men of the seventeenth century had been killed in infancy, the modern world would not exist. And of these hundred, Galileo is the chief.

—BERTRAND RUSSELL

NEWS AND NOTES

PAPERS OF PROFESSOR C. K. CLARKE.—Through the generosity of his daughter, Miss Emma de V. Clarke, Dr. Clarke's papers have been presented to the Department of Psychiatry of the University of Toronto, where this valuable historical material will be available for study.

In accepting Miss Clarke's gift on behalf of the Department, Professor Aldwyn Stokes spoke in appreciation of Dr. Clarke's great contribution which is becoming increasingly recognized.

Dr. Clarke was the first professor of psychiatry in the University of Toronto (1906-1924). He had also served as Dean of the Medical Faculty, and during World War I had been head of the Department of Psychology and superintendent of the Toronto General Hospital. He was the first director of the Canadian National Committee for Mental Hygiene and held that position until his death in 1924. He had been superintendent of Ontario Mental Hospitals both at Kingston and Toronto. He established the first outpatient psychiatric clinic for children in Canada. He was the first Canadian to serve on the editorial board of the *American Journal of Psychiatry*.

Considering his pioneering work and his constructive leadership throughout his long professional life, C. K. Clarke may be ranked as the preeminent representative of the mental health field that Canada has produced to date.

THE NEW JERSEY NEURO-PSYCHIATRIC INSTITUTE.—The 8th annual Psychiatric Institute will be held at Princeton, N. J., Sept. 14, 1960, beginning at 9 a.m. The theme will be Psychiatry in Foreign Lands. President of the APA, Robert H. Felix will preside.

The assignments are: France, Holland, Belgium—Dr. Barton; Russia—Dr. Lebesch; Pakistan, Thailand, Indonesia—Dr. Morse; Japan—Dr. Balser.

At the dinner meeting at 7 p.m. at the Princeton Inn, the third annual Nolan D. C. Lewis Award will be presented.

AMERICAN ACADEMY OF PSYCHOTHERAPISTS.—The fifth annual conference of the Academy will be held in Cleveland, Ohio, on October 15 and 16, 1960, at the Hotel Carter. The title for this meeting will be "Psychotherapy—Healing or Growth." The format will be based on a phenomenological approach rather than according to schools of psychotherapy. There will be at least four panelists. The discussion is to be impromptu and no paper is to be read. It will be chaired by Dr. O. Spurgeon English. The attendance will meet in small discussion groups and formulate questions for the panel. For further information write to Dr. Bill J. Barkley, Chairman, 1856 Coventry Road, Cleveland Heights 18, Ohio.

O. T. NEWSLETTER.—This publication is available free of charge from the Editor, Alan H. McLean, M.D., I. B. M. Corp., 590 Madison Ave., N. Y. 22, N. Y. and not from the Mental Health Materials Center as stated in the July issue. The publication *Troubled People on the Job* is available at .50c from the Center, 104 E. 25, N. Y. 10, N. Y.

DOCTORATE IN NURSING SCIENCE.—Dean Marie Farrell of the Boston University School of Nursing announces that a Doctor of Nursing Science degree, the first doctorate in the country which specifically identified nursing in the degree title, has been established at the Boston University School of Nursing.

The first doctoral offering is in psychiatric nursing, with programs in other clinical areas to be instituted in the next two to four years.

Previously, the highest level of training offered at the School was the Certificate of Advanced Professional Specialization, consisting of a minimum of 30 semester hours of advanced study beyond the master's degree. The new degree program calls for a minimum of 60 semester hours' credit in advanced, directed study, plus a doctoral dissertation.

Overall, the objective of the advanced psychiatric nursing program will be to develop further the nurse's role, to include well-defined psychotherapeutic responsibilities which she undertakes in collaboration with the psychiatrist. Extension of this nurse-therapist's role into research, teaching, administration and consultation will be further utilization of the knowledge gained in her doctoral study.

Generous financial support for the establishment of this program has been granted to the University by the National Institute of Mental Health.

KAREN HORNEY ANNIVERSARY.—To commemorate the 75th anniversary of the birth of Karen Horney, the Association for the Advancement of Psychoanalysis is sponsoring a symposium on "Alienation and the Search for Identity," November 5 and 6, 1960 in the Carnegie Endowment International Center in New York City. The main sub-topics will be: "Alienation and the Self," "Alienation and Culture," and "Alienation and Therapy." Some 20 speakers will participate.

RESEARCH FOUNDATION OF THE NATIONAL ASSOCIATION FOR MENTAL HEALTH.—This new unit of the National Association will allocate grants for projects and programs concerned with the causes, prevention and treatment of mental illnesses. It will also provide fellowships for medical students interested in research on mental illness.

The foundation will assume the functions of the research department of the National Association for Mental Health, which has been functioning since early 1959, and which has to date allocated \$208,500 in research grants.

President of the research foundation is Dr. Harold Elley of Wilmington (Del.), formerly chief of research of I. E. duPont de Nemours Company. Its director is Dr. William Malamud, who also serves as director of Professional Services of the National Association for Mental Health. Dr. Malamud is also director of the Schizophrenia Research Committee of the Supreme Council 33° A. A. Scottish Rite, Northern Masonic Jurisdiction. The Scottish

Rite grants are disbursed through the National Association for Mental Health.

THE AMERICAN PSYCHOSOMATIC SOCIETY.—The Society will hold its 18th annual meeting at Chalfonte-Haddon Hall in Atlantic City, April 28, 29, and 30, 1961.

The Program Committee would like to receive titles and abstracts of papers (9 copies) for consideration. Time allotted : 20 minutes. The deadline for abstracts (not more than 2 typewritten pages) is December 1, 1960.

Abstracts should be addressed to the Chairman, Morton F. Reiser, M.D., at 265 Nassau Road, Roosevelt, New York.

ANNALS OF THE NEW YORK ACADEMY OF SCIENCES.—This publication, dated April 22, 1960, is given over to the topic "The Organization of Psychiatric Care and Psychiatric Research in the Union of Soviet Socialist Republics" by Dr. Nathan S. Kline of Columbia University and Rockland State Hospital.

Dr. Kline treats the subject under the headings of Organization of Psychiatric Care, Organization of Psychiatric Research, and Generalizations from Psychiatry to Society, followed by five appendices : Psychiatry in Czechoslovakia, Research Activities in Soviet Institutes, Neuropsychiatric Facilities in the U.S.S.R., Research Plan of the Academy* of Medical Sciences and Resolution on Academician I. P. Pavlov.

INTERNATIONAL SYMPOSIUM, EXTRAPYRAMIDAL SYSTEM AND NEUROLEPTICS.—This symposium, organized by the Department of Psychiatry, University of Montreal, will be held at the University, November 17, 18 and 19, 1960. The symposium will be introduced by J. Delay and P. Deniker (Paris), and eminent speakers from Germany, France, England, Switzerland, Belgium, the United States and Canada will participate.

The main subjects for discussion are : 1. Anatomy and Physiopathology, 2. Pharmacology, 3. Parkinson's Disease, 4. Extraparamidal Syndromes and Clinical Psychiatry, and 5. Special Topics.

For information write to Jean-Marc Bordeleau, M.D., Secretary of the Symposium, Department of Psychiatry, University of Montreal.

DR. ROBERT ROESSLER TO HEAD WISCONSIN PSYCHIATRIC INSTITUTE.—The appointment of Professor Robert Roessler, Chairman of the Department of Psychiatry, as Director of the Wisconsin Psychiatric Institute was recently announced by the Regents of the University of Wisconsin. The dual appointment serves as a means of combin-

ing in effective teamwork Wisconsin's clinical, educational and research resources in the field of Mental Health.

Dr. Roessler has been Asst. Prof. of Neuropsychiatry since 1950. He received the B.S. in Philosophy from the University in 1942 and a M.D. from Columbia in 1945. He became Acting Chairman of the Department of Psychiatry in 1956 and permanent Chairman in 1957. Under his leadership, an integrated residency program with the Department of Public Welfare has been developed.

EFFECT OF EDUCATION

Great minds are pre-eminently good or bad, and education makes them better or worse.

—OSLER

GOVERNMENT

Popular government or democracy is going to fail if left solely to the official class. There must be a volunteer class, of strong, capable men offering their services and interesting themselves actively in the affairs of the government.

—WILLIAM H. WELCH

BOOK REVIEWS

HUMAN POTENTIALITIES. By *Gardner Murphy*.
(New York : Basic Books, 1958, pp. 340.
\$6.00.)

This book poses the central problems of our time, and promises answers. It asks the question "Where is mankind headed?" with the clear implication that the reader will be handed a time table, a map, and a set of directions. "One of America's foremost psychologists," the jacket proclaims, "dramatically shows us how we can, by our own free choices, control not only our destinies, but those of countless generations to come."

Unfortunately, the promised potentialities remain unfulfilled. It is doubtful whether we, or the "countless generations to come," can derive more from this volume than an interesting statement of Gardner Murphy's views on the nature of human evolution. It is his central premise that human nature has changed and is changing. Should we become aware of the nature of ongoing changes, and of our role in determining them, we may control them for the better. Presumably the book is intended to aid in this process. And since it is mainly the scientist who would provide the awareness and determine the improvements, it is to him that the book is implicitly addressed.

Man, at present, is a cumulative composite of 3 "human natures." The first is close to that of our simian ancestors. It derives satisfaction from all manner of activity, experience, and learning. But soon certain experiences and activities come to be reinforced, and the process of "canalization" sets in, which creates the "second human nature." Here man becomes progressively molded along lines determined by particular cultures, and these molds harden. Despite the pressures with which cultures stifle inventiveness and seek to perpetuate their preferred systems of habits and percepts, a quest for understanding, an insatiable curiosity arise. This is the "third human nature."

In the process of exploring and changing the world, man himself becomes changed. There is no boundary between man and his environment (an adaptation of Lewin's "life space"), the two are inextricably linked and evolve together. We can therefore shape ourselves by shaping the world, and *vice versa*. This is the argument. Nothing less, and very little more. This disappointingly simple and relatively superficial argument is stated in language which frequently glows, and some-

times sparkles. Describing mankind's present dilemma, for instance, Murphy remarks that "there appears to be no escape for any of us but to hide in the hills in the hope that radioactive fallout will somehow not drift into our caves." In his chapter on "rigidity" he tells us that "there is such a thing as being battered down, either dramatically or just quietly and steadily year by year, until one no longer looks up." In a chapter on creative phases of history, we read : "We must demand always that proof be given that the impossible is truly impossible." Children should be encouraged to develop their creative potential ; one must study "the ways in which the fires of infancy can be gently transferred to the new furnaces of high creativity." He describes this process elsewhere as "first support, a hand to hold ; then a few steps alone ; then a race against time to see how much a short life can yield."

One cannot but experience delight at the exquisitely modulated phrases, the unexpectedly appropriate words scattered throughout the book. Our First Human Nature wallows in this verbal confectionery. Our Third Human Nature, however, cannot but wonder whether some of these refinements might not have their origin, like the erotic extravagances of certain Oriental potentates, in the need to deviate from an excessively repeated pattern.

Indeed, as we read through the book, we are assailed time and again with a feeling of *déjà vu* which turns out to have a sound basis in external reality. Murphy experiences the same thoughts over and over, and repeats them mostly with minor variations. It is an uncanny experience to read page after page of iterations and reiterations, only to meet the now familiar ideas again, in a slightly different context, a few chapters later. The exposition of the 3 human natures, for example, consists of pages of synonymous descriptions. Ideas such as that by changing civilization we change human nature ; that man is one with his culture and with the "cosmos" ; that we cannot extrapolate into the future because of emergents, and that we need more research (e.g., about eugenics), appear again and again. There are many cross-references, some of which seem to hold out the prospect of analyses that are never carried out, or pronounce as answered, questions that have hardly been posed.

One frequently gains the impression that

the author regards a problem as solved merely because he has mentioned it, or assumes that a set of assertions constitutes an argument. He describes "cultural lag" for instance, and tells us that he has provided us with a clue for its explanation. He dismisses a major portion of contemporary social science—the concern with the development of organization man, suburbia, etc.—with a passing reference to impulses like the need to make discoveries. He resolves the issue of free will in 4 or 5 pages. He disposes of rationalism by calling it "dogmatic." In many places, *Human Potentialities* contains assertions for which no factual or logical support is offered.

Occasionally empirical statements are made which are possibly subject to question. We are told that "mutations are constantly going on (probably one mutation for about 5 new births)." At another point we are told that young people could not be creative in times of depression or during post-war periods because "there was no great idea on whose wing they could fly." What of the bulk of American and European literature which flourished in precisely such times? Possibly we have misunderstood Murphy's point, since some of the most impressive passages in the book are discussions of literature, music, and art—especially art. The author shows a familiarity with and a love for art which would do a professional critic or art historian justice.

It is not a function of a reviewer to take issue with a writer's position on substantive matters, but it may be legitimate to make such a position explicit. We note that Murphy introduces a mystical element into his book. He talks about man having "affinities," "resonance" or "isomorphism" with the universe, of man's structural relatedness to the cosmos. He endorses parapsychology, which he regards as supported by overwhelming evidence. He also takes a position in favor of eugenics. On the other hand, he has little to say about social improvements, about problems of inequality, poverty, oppression or prejudice. He does not talk about economic or social relationships. He makes no reference to the role of low status or economic deprivation in stunting human potentialities. Murphy's feeling seems to be that our hope rests in the scientist, and not in the revolutionary. He sees understanding rather than social reform, as the key to the future. Some of us may quarrel with this emphasis, but it is certainly legitimate. By the same token, however, we need not accept Murphy's implied contention that a disagreement with his position on, say, parapsychology, denotes narrowmindedness, in-

tolerance, fear, or obstruction of progress. Merely because an idea falls outside the mainstream of science does not make it progressive. It may be, of course, but on the basis of past experience the probabilities are against it.

This reviewer found chapters on "rigidity" and "creativity in our era" thought-provoking and impressive. He was less happy with a section on "biological changes in man" in which the author discusses eugenics (favorably), or a chapter in which he examines moral implications in science. For "least liked" chapter, this reviewer would nominate one which contains speculations about alternatives open to the world among possible "orders" of society. The selection of the alternatives presented seemed to be somewhat arbitrary.

It is unfortunately not possible, in due conscience, to end this review by recommending *Human Potentialities* as bedside reading, as a professional reference book, or as a volume with therapeutic properties. It is a highly original and relatively systematic set of ideas about human nature and its evolution. Those who are interested in this sort of thing should find it rewarding.

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THE LIFE AND TIMES OF SIR CHARLES HASTINGS. By William H. McMenemy. (Edinburgh: E. & S. Livingstone; Baltimore: Williams & Wilkins, 1959, pp. 516. \$10.00.)

Study of the history of medical organizations often reveals the fact that they owe their existence and development to the enthusiasm of one man. The British Medical Association is no exception to this rule, for it owes its existence to an English physician of great ability and charm, who saw the need for medical unity and had the foresight and energy to put his vision to practical use.

Sir Charles Hastings was born in 1794, apprenticed to two apothecaries and appointed house surgeon to the hospital of Worcester, England, while still a teenager. As soon as circumstances permitted, he resigned his post to study in Edinburgh from which he emerged with an M.D. in 1818. He was determined to be the foremost physician in Worcestershire, and lived to see his ambition fulfilled. He was an acknowledged authority on diseases of the chest at the age of 26, and somewhat later, because of his desire to spread medical information, turned his thoughts to journalism. In 1828 he started a journal known as the *Midland Medical and Surgical Reporter*. Un-

fortunately, after a period of success, the journal folded up as a result of the business failure of its publisher, Mr. Tymbs.

Nothing daunted, Hastings promptly formed an association known as the Provincial Medical and Surgical Association, mainly to sponsor the medical journal he edited. Thanks to his careful planning, the association thrived from the start and Hastings became one of the first two secretaries, serving in this capacity for many years, and subsequently being appointed the permanent president or chairman of the council of this association. It is interesting to note that at the second meeting in 1833 when 316 members had already gathered together, the whole progress of medicine and surgery for the year was reviewed by Dr. Barlow in one hour. Incidentally, the first American visitor to an annual meeting was Dr. Sweetser of Boston who was warmly welcomed in 1835.

The present biography of Hastings and his times is aptly named, for McMenemy is concerned not so much with a personal biography as with a story of the interplay of Sir Charles Hastings' ideas and activities, and the problems of the day such as medical reform with the demands of licensing of practitioners and unification of qualifications in England, and the constant running battle between medical practitioners and the Poor Law authorities over the medical care of paupers. The Provincial Association which Hastings founded grew in strength under his wise guidance, while other rival societies founded in London withered away under internal conflict. Hastings constantly kept before him the need to keep together the physicians, surgeons and general practitioners, and gradually wore down the criticisms of Thomas Wakley, the fiery editor of the *Lancet*, who began by castigating the Provincial Association and ended by admiring it.

Yet even Hastings had his blind spots, for when the day came when London wished to join in and the time was ripe for renaming the society the British Medical Association, Hastings first opposed this move. However, when he eventually saw the need for a new name, he was the first to propose it, and the British Medical Association was born in Birmingham in 1855.

There is very little in this book about the private life of Hastings, that is, assuming that his many activities in medical politics and his practice (which included the proprietorship of a lunatic asylum) left him any time for a private life. But his public activities are documented to the last degree, and this book is obviously designed to be the definitive biog-

raphy for many years to come. It is an essential for medical historians, and a near-essential for any student of medical politics. The story carries lessons for organized medicine even today.

STANLEY S. B. GILDER,
Editor, The Canadian
Medical Association Journal.

MENTAL SUBNORMALITY, BIOLOGICAL, PSYCHOLOGICAL, AND CULTURAL FACTORS. By Richard L. Masland, Seymour B. Sarason, and Thomas Gladwin. (New York: Basic Books, 1959, pp. 442. \$6.75.)

This book's Introduction states: "The early planning and development of this program was actively sponsored by the ad hoc committee on mental retardation of the National Institute of Neurological Diseases and Blindness and the National Institute of Mental Health as part of their program development activities in this field. The National Association for Retarded Children received additional financial support from the Association for the Aid of Crippled Children, the New York Foundation, the National Institute of Neurological Diseases and Blindness, and the National Institute of Mental Health."

This book is the result of very comprehensive surveys of presently known causative factors in mental subnormality, a term embracing both mental deficiency (organic) and mental retardation (non-organic), so defined by the World Health Organization.

While the book is by no means a primer in the subject of mental deficiency and requires a good deal of prior knowledge to adequately comprehend, it is of great value to those working in the field. Indeed, careful reading might attract to the field those workers of varying professional background who are seeking out projects.

Two separate works comprise the publication, part one being a summary of the biological factors by Richard L. Masland, M.D., a neuropsychiatrist, and part two a discussion of the psychological and cultural factors by Seymour B. Sarason, Ph.D., a psychologist, and Thomas Gladwin, Ph.D., an anthropologist. The distinctly different approaches of the authors, reviewing the works of thousands of individuals in practically all disciplines, emphasize the complicated multiple etiologies in mental deficiency and mental retardation.

Masland presents the prenatal and post-natal organic causes very effectively, indicating what the near-future advances in genetics may be and the public health ap-

proaches to the study and control of environmental agents. He believes some prenatal factor is paramount in the majority of cases and although the biochemical approach is encouraging, the problems in this field should be studied by multidisciplinary groups associated with universities. Masland expresses the psychiatric point of view in that biological, psychological and cultural factors all operate in the entire range of intelligence, and disputes the concept that "organic" brain damage applies only to the severely defective group. Minor mental impairments extend into the normal population and the biological research that Masland has indicated has implications for universal mental health which must be integrated with those derived from work in the psychological and sociocultural fields.

The second section considers in detail the validity, based on theoretical and cultural comparisons, of the concept of mental defect. It reviews in great detail those studies which indicate that the majority of those who are regarded as defective during their educational years prove to be adequate adults, and questions the value of traditional education for that group.

Two chapters deal with the severely defective, pointing out the resemblance of their behavior to psychoses and the need to explain that behavior rationally, instead of dismissing it as due to organic defect. The authors make a strong plea for objective study of, and assistance to, this group, based on approaches devoid of defeatist assumption.

Unfortunately, the style of the second section is of extremely polemic character. There is a "harping" quality about the questions raised concerning education, IQ tests, and cultural influences in mental retardation. The authors, after reviewing considerable research in the matter, conclude that present psychometric tests fail to adequately predict adult problem-saving behavior, do not tap a sufficient variety of intellectual processes, are unreliable, and are strongly weighted in the direction of maintaining middle and upper class social values. Although these points are all relatively true, they do not rule out the use of tests in conjunction with all the other criteria regularly used in diagnosing mental retardation. Such tests came into use long after the concept of mental deficiency. To pick on IQ as though it were to blame for creating a pseudo-problem is quite misleading.

A series of recommendations for theoretical review, research and research centers, as well as personnel recruitment and training, conclude the second section. This book should serve

as a valuable text in medical schools, departments of sociology and psychology, and in schools of education.

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ESKIMO. By Edmund Carpenter, Frederick Varley, and Robert Flaherty. (Toronto: University of Toronto Press, 1959. \$4.95.)

The text of this large quarto volume is provided by Professor Edmund Carpenter, of the Department of Anthropology at the University of Toronto, the reproductions of sketches and paintings, by the Canadian artist Frederick Varley, and the carvings, which illustrate many pages of the book by the late Robert Flaherty. The importance of this volume for students of the human mind lies in some rather astonishing facts which Professor Carpenter brings out. These relate to the extraordinary mechanical abilities of the Eskimo. Machines that cannot be repaired by experts are child's play to an Eskimo who may never have seen such a machine before! Airplane engines that defy the trained mechanics are a lark to the Eskimo. Asked to draw a map of their island, a land mass of some 20,000 square miles, two Eskimos who had never previously drawn a line in their lives produced maps so accurate that they differ only in the slightest details from those produced by the aerial cartographers.

Has this remarkable faculty something to do with their constant training and necessity to orient themselves in relation to signs which appear non-existent to the non-Eskimo observer? Is there a genetic factor involved here, or is it a matter of cultural conditioning, or both? Evidently, both. But to what extent is this ability culturally conditioned and to what extent genetically? Here is a nice problem for investigation.

This is a charming and attractive account of Eskimos, anecdotal rather than systematic, and very reasonably priced.

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INDIVIDUUM UND KRANKHEIT. GRUNDZUEGE EINER INDIVIDUAL PATHOLOGIE. (Individual and Disease. Fundamentals of an Individual Pathology). By Friedrich Curtius. (Berlin: Springer Verlag, 1959.)

In his introduction, the author explains that anthropological medicine with its concern about the metaphysical meaning of the individual case and with the establishment of a phenomenological, essentially intuitive appraisal-

al of the personality cannot, despite all its importance, answer questions about the biological constellation of the individual patient. He undertakes to show that "an objective, structural analysis of the individual combination of conditions" can elucidate the individual case. Professor Curtius discusses types and concludes that the types are often too broadly conceived. As they, in the reviewer's opinion, never are "realized," but represent only "ideal" frames, it is little wonder always to be faced with deviations of the individual from "his" type. It can be assumed, though, that in the "typical," as a rule, constitutional factors come to manifestation.

Constitutional factors play a role in pathogenesis, in the premorbid condition, in the individual way of response and in organ dispositions. Not all these factors are exclusively constitutional in every single case: it belongs to the hard task of diagnosing to find out as much as possible about all the factors under consideration. The factors mentioned plus environmental factors cannot but lead to the assumption of the pluricausality in the genesis of every case.

There is, however, not only the pluricausality pathogenesis, in which the individuality of the patient is expressed; it also makes itself noticed in the "shaping," in the formation of his sickness (*Krankheitsgestaltung*). Here Karl Birnbaum's notion of the pathoplastic is used with emphasis.

The author demands that in any adjudgment of disease, justice be done to the "nosological reality instead of dogmatic fiction." The particular consideration of the individual ought to modify the "school" diagnosis through the individual diagnosis. Such considerations are as necessary as they are useful in expert opinions (*Begutachtung*) and in respect to prognosis.

Discussing therapy and the combination of diseases, the author devotes several pages to complications during pregnancy.

The text is constantly enlivened and enriched through case histories. There are 58 illustrations, some of them in color.

This is an unusually solid and important book. The author is the chief of a large medical department in a communal hospital in Luebeck (Germany). He has built up this book on his own clinical experience which he has constantly and critically widened and broadened. He tries to be fair to certain psychological influences, some of which seem to blossom in German medicine nowadays, but his own attitude is clearcut scientific. Not without a certain humor does he make the statement that the notion of unicausality only re-

cently dropped in pathology, reenters the scene in psychosomatics. The author knows as well as any of the modern "Psychiker" (word and quotation marks are the responsibility of the reviewer) that people with a labile autonomous nervous system respond accordingly to conflicts. He regrets the exaggeration of constitutional and hereditary factors as much as the one-sided emphasis on environmental influences.

We are given here the fruit of indefatigable clinical work and—as if it were in an aside—are reminded that "facts" weigh more heavily than "theories."

Despite his clearly formulated attitude the author is open to all possibilities that may grow out of the present crisis of medicine.

This book may well become a classic.

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SIGNIFICANT TRENDS IN MEDICAL RESEARCH.

The Ciba Foundation 10th Anniversary Symposium. Edited by G. E. W. Wolstenholme, M.B., Cecelia O'Connor, B.Sc., and Maeve O'Connor, B.A. (Boston: Little, Brown & Co., 1959, pp. 356, ills. \$9.50.)

This volume exemplifies the great service of the Ciba Foundation and its parent Ciba Limited of Basle to medical education and research. Thirteen international authorities representing the range of contemporary research were invited to present those features of work in their fields which they considered most significant for future trends. Seven of these scientists are Nobel Laureates. Ample discussion followed each presentation.

This three-day symposium held in London was undoubtedly one of the most important of the fifty symposia and colloquia originated by the Ciba Foundation and published by J. & A. Churchill, Ltd. Here we can only indicate the scope of the Symposium by listing the titles of papers and their authors in the order of presentation. They were:

1. Molecular Structure in Relation to Biology and Medicine, by L. Pauling of the California Institute of Technology.
2. Fluorimetric Studies on Pyridine-Nucleotide Enzyme Complexes, by H. Theorell, Nobel Medical Institute, Stockholm.
3. Chemical Basis of Virus Multiplication, by G. Schramm, Max-Planck Institute, Tübingen.
4. Population Dynamics of Body Cells, by Sir Macfarlane Burnet, Walter and Eliza Hall Institute, Melbourne.
5. Genetics and Medicine, by J. Waldenström, Malmö Allmänna Hospital, Malmö.

6. Ten Years of General Neurophysiology, by A. von Muralt, University of Berne.

7. The Nature and Mechanism of Action of Hormones, by F. G. Young, University of Cambridge.

8. Metabolic Problems Involving the Pancreas, Choline, Insulin, and Glucogen, by C. H. Best, Banting and Best Dept. of Medical Research, University of Toronto.

9. Research in Chronic Pulmonary Disease, by D. W. Richards, Columbia University, New York.

10. Malignant Transformation: its Mechanisms and Nature, by A. Haddow, University of London.

11. Research in Clinical Nutrition, by J. F. Brock, University of Cape Town.

12. The Quantitative Approach to Disease—Exemplified by Essential Hypertension, by Sir George Pickering, University of Oxford.

13. Factors Influencing the Substance and Dimension of Medical Research in the United States, by J. A. Sannon, National Institutes of Health, Bethesda.

Sir Harold Himsworth presided over the Symposium. In his closing remarks Sir Harold Himsworth observed that when, with the introduction of the experimental method into medicine by William Harvey, it became possible for the basic medical sciences to advance rapidly while the clinical branches lagged behind at the observational level. In recent years however it has been possible to apply experimental techniques to the living patient and clinical medicine is rapidly catching up. We are now entering the stage "where it is possible to consider the whole of medical knowledge again as one intellectual continuum." This present symposium is evidence of that fact.³

C.B.F.

ESSAYS IN INDIVIDUAL PSYCHOLOGY. Edited by Kurt Adler and Danica Deutsch. (New York: Grove Press, Inc., 480 pp., 1959. \$2.95.)

In this book Kurt Adler, the son of Alfred Adler, and Danica Deutsch have gathered more than 50 articles written over the years by psychiatrists and psychologists who use predominantly Adlerian concepts and methodologies in handling their psychotherapeutic problems.

The topics discussed in the treatises range over a wide field and are grouped into 4 main sections: philosophical concepts, theoretical principles, therapeutic procedures and case

presentations. One is at once struck by the freshness, directness and clarity of expression as well as the lack of devious thinking, attributes that were so characteristic of Alfred Adler and which apparently have filtered through to his followers. This is indeed admirable when it does not lead to over-simplification or superficiality, pitfalls that have been successfully avoided by all contributors. As a result the overall style makes for lively, "interesting and stimulating reading."

It is very important that a book such as this should have appeared at this time for, as Joseph Wilder states in his introductory remarks—"most observations and ideas of Alfred Adler have subtly and quietly permeated modern psychological thinking to such a degree that—the question is not whether but rather how much of an Adlerian one is." If this is so, and the evidence seems to support this assertion, a presentation such as the one before us is most timely.

In a short review it is impossible to do justice to the efforts that have gone into the work of writing the articles and editing this volume. Suffice it to say that we are presented here not with a text book on Adlerian psychology but rather with a bird's eye view and a description of many of his concepts together with their practical employment.

Most interesting, too, are the articles which link Adlerian Individual Psychology with other orientations, such as those of Freud, Jung, Existentialism, various group methodologies, psychodrama, Meier's intermediary distasteful therapy, Genderson's graphic play therapy and others. This very enumeration shows once again how widely Adlerian thinking has penetrated into virtually all of psychotherapy.

Thus I think that we owe Alfred Adler most humbly a vote of profound thanks. Moreover, it is heartening to know that his daughter Alexandra and his son Kurt, in collaboration with Danica Deutsch and many other psychotherapists are keeping his thinking and methodologies alive and growing by having formed and by directing the Alfred Adler Consultation Center and Mental Health Clinic in New York which perform the double function of therapy and research.

To this reviewer it seems that *Essays in Individual Psychology* should be on the desk (not merely on the shelf) of every psychotherapist, irrespective of his or her specific persuasion or emphasis of orientation.

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THE ACADEMIC LECTURE

A SOCIOLOGIST'S VIEWS ON PATIENT CARE¹LEO W. SIMMONS²

For twenty-odd years I have owed a debt to American psychiatrists. This invitation to address you gives me the opportunity to acknowledge the debt, and to attempt a small token payment. In the mid-thirties I was fully engaged and quite content in the joint disciplines of anthropology and sociology as they then existed at Yale University. I was at that time invited by the School of Medicine and the Graduate School to fill a joint appointment as "consultant to psychiatry" from the field of the social sciences. For twelve years thereafter I was constantly at the elbow of a psychiatrist or sitting with his patients, reading their records, visiting their relatives, or participating in conferences concerned with their problems. As a consequence, my life interests and my professional career changed substantially. I found myself more and more involved in a discipline that has come to be labeled "medical sociology." And I have moved further and further into the health field until it has become a full-time vocation.

My major debt to psychiatrists, who have treated me so much as a colleague, is for building up within me a deep and abiding interest in the concepts and processes involved in what may be suitably called personalized patient care. They have taught me in an informal, but indelible way, at least 5 cardinal principles: 1. The uncanny uniqueness of every individual; 2. The concept of wholeness of the person with his illness; 3. A profound respect for subjective experiences as they relate to physical and personal welfare; 4. The underlying continuities in life experience, indeed the stronger continu-

ities in the abnormal or atypical experiences; and 5. The scientific expediency of exercising restraints on personal blame in order better to understand individual behavior.

In more recent years I have gone on from psychiatry to follow patients into the general hospitals, taking with me the viewpoints and general principles learned from them. There I have identified myself more closely with the general medical practitioners, with nursing personnel, and, last but not least, with hospital administrators. But always, it has been easiest and most natural for me to identify with the patient and to think as a layman and as a potential patient. It has been most natural for me to "feel like a patient" as I sat and waited with him on the "admission benches"; followed him to the ward and to his bed; waited outside an operating room; sat with the nurse in the recovery room; heard about a favorable or unfavorable prognosis; and sometimes followed the patient to the morgue, heard about his autopsy, and attended his funeral. Frequently it has seemed not too difficult, figuratively, to "crawl into the skin of the patient and to see his experience through his eyes." Whatever I can say is in substance, therefore, little more than the distilled echoes of what has been heard by me in conference with medical personnel about patients or from the lips of patients themselves or their relatives. So please try to think of me for the next few minutes as the voice of patients or their representatives—plain, simple, and to the point, as patients and their relatives are expected to speak in hospital settings.

LAY ASSUMPTIONS CONCERNING MEDICAL CARE

It may be useful at this point to call to your attention a few assumptions presently held more-or-less by the lay public and by potential patients, about medical and hospi-

¹ Read at the 116th annual meeting of The American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

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tal practice. The assumptions we share as patients, however valid, influence of course our expectations of hospital staffs when we surrender unto them our ailing and handicapped bodies, our street clothes and accoutrements, our stubborn wills, and our bank accounts. These assumptions may serve as a kind of platform for your consideration of the rest of the paper. It must be left with you to decide whether these assumptions on our part square with reality or not in the present state of medical practice. But whether they do or do not, they color our thinking and affect our reactions.

The first assumption, widely shared, is that modern medicine is now able to make new and almost unbelievable contributions to our health. Amazing therapeutic and rehabilitative potentialities appear to be available or in the offing.

At the turn of the century, a high authority on medical care made the statement that, at that time, if a person became ill and sought the services of a medical-hospital team, his chances were slightly better than 50-50 that he would be helped beyond the measure of family and folk remedies.

I remember as a boy, around 1907, passing the local hospital with my father who pointed out that we should go by quietly, as the sign said. He explained that it was the place where "people are taken when they are very sick." He warned me that "many go in and few get out alive." Then he called off names of neighbors who were taken in sick and "carried out in coffins." I was quiet, *very quiet*. I can almost hear him say now, "Son, Stay Out!" He managed to stay out until 82. I stayed out until nearly 40—probably to my disadvantage because of the progress that has been made in medicine. I now say to my offspring, "that's where you were born and it's where you may be kept alive."

Now the odds of having our lives prolonged by putting ourselves into the hands of medical science are very great—so great that for some of us oldsters it may even become too difficult to die in a hospital.

It is reported of a famous American surgeon, that when he became terminally ill and knew it, he persuaded a colleague to promise to take him home to die. When asked why, the surgeon said, in effect,

"When I am nearing the end, I don't want to be stuck full of needles in order to have life drawn out just a little longer."

However that may be, we expect something close to miracles when we enter hospitals today.

A second assumption, shared apparently by many potential patients, is that modern medical personnel, and other health professionals, are not nearly using their full capabilities for maximal health and patient care. We strongly suspect that our professionals are not doing for us what they could do under the proper conditions of organization, environmental control, public support, and interpersonal relations. Sometimes when we potential patients fantasy on what we understand modern medicine can do, and what it often does do, we feel a considerable let-down. We wonder wherein lies the chief flaw between what we could get in health care and what we actually get. We as patients tend to believe that the answer lies more in faulty application than in lack of the basic knowledge and skills. We suspect that defaults lie more in the interprofessional and interpersonal relationships than in poor physical techniques. Simply to illustrate the point, I recently sat beside two doctors at a restaurant counter. The first was commenting on the death of his own father. He said, "Father's physician practiced almost perfect physical techniques," and added, "but his human relations were rotten."

A third assumption follows out of the former two. Potential patients are becoming less and less satisfied with what they get in medical care. They may profess, when interviewed, that their doctor is "all right," but about physicians and hospitals in general, the answer is frequently different.

It is a fact that many patients take with several "grains of salt" the medical public relations' pronouncements that the primary purpose of the hospital is the welfare of the patient. Some of us really suspect that in order better to understand what goes on in the hospital, it is necessary to consider seriously some of the secondary and tertiary interests or forces that "turn the wheels" of the system. In fact, we potential patients might better understand, and be better satisfied with, the hospital service if we

viewed it like any other human institution or organized enterprise, such as a bank, a hotel, a school, or perhaps a good auto service station.

Our fourth assumption is more like a forecast. What the future of medical care in America will be is hard to predict. But as far back as 1926, changes of great import appeared clear to some in positions of medical leadership. The vision reflected in the remarks of George E. Vincent, then president of the Rockefeller Foundation, is not difficult even for laymen to comprehend today. I quote :

It looks as if society means to insist upon a more effective organization of medical service for all groups of people, upon distribution of costs of services over large numbers of families and individuals, and upon making prevention of disease a controlling purpose. Just how these ends will be gained only a very wise or a very foolish man would venture to predict. One thing seems fairly certain : in the end society will have its way.

Our fifth and last assumption is not very complimentary to us potential patients. It is that modern scientific medicine faces substantial resistance, and some subterfuge, on our part in the full and forthright practice of its therapeutic potentials. Resistance ranges from apathy to hidden and unconscious stallings by us patients and our relatives. We also play sometimes for the secondary gains in being ill. Someone has said, perhaps correctly, that in general we patients part into two categories of the "sheep" and the "goats," or the "cooperatives" and the "crocks," at the great divide between a basic desire on our part for cure or for care. It is the care-motivated group among us that constitutes the great challenge in medical application. Hospital staffs are going to have many of us with them for a long time. Should the difficult patients continue to wear the title of "crocks," then there will be a great and growing need for development of the art and science of crockmanship in hospital practice in order to help us cope more successfully with our handicaps.

The fact seems clear that the obstacles to the application of medical and nursing care can be almost as formidable as are those to the discovery of the effective ther-

apies. Let us face it, we are not all willing and cooperative patients, and we often fail to cooperate when it would be far easier for us, were our health problems handled in their early and preventive or corrective stages. In short, the business of patient care is only half accomplished by the discovery of new therapeutic skills. The health professional can still encounter sick and dying people around him, know what to do, and be helpless to do it. He can be held captive and relatively immobile by a complex of lay forces and resistances that are beyond his control.

Do such assumptions as these have a firm basis in fact ? If so, what is the background of the facts ?

THE IMPACT OF CHANGE

The facts are these, in part. Changes are under way in the health field and newer concepts of patient welfare are holding sway. It may sound trite, but it's true and significant, that medicine will move with the times or it will fall behind. In the present pace of change, our professions must all but "run" in order to keep "standing" in their rightful places. The health professions are no exception, for there is no good opportunity to "stand-pat" on patient care. According to Ibsen, "That man is right who is most closely in league with the future."

Change is on the march, with certain broad, "outside" changes that are shaking the foundations of traditional hospital practice. There are other changes within the hospital system that are upsetting the old order of staff-patient relations.

CHANGES OUTSIDE THE HEALTH FIELD

Of the broad, outside changes, first, there is the increased mobility of the population : horizontal mobility in that we shift our homesites repeatedly in the course of a lifetime and a fifth of us change our addresses annually ; vertical mobility in that we strive to move up in the social ladder hopefully at least one rung per generation and correspondingly improve our standards of consumption. We Americans have become, thus, to a high degree doubly nomadic. It is not easy to maintain stability and continuity of patient care in the midst of such accelerated "nomadicism." Such mobility is

bound to upset established norms and expectations in medical practice.

A second broad change is a steady increase in the sophistication of the lay public, associated in part with the higher standards of living and communications, including education. There was a time when the gap between what the physician knew and the general knowledge of the average person was wide indeed and constituted a sort of intellectual aristocracy for the profession. This gap can be illustrated somewhat by the preliterate patient who approached his doctor, gave him his hand, and waited in silence. Holding the hand, the physician asked, "Now what is your trouble?" The patient is said to have replied, "I am just a plain, ignorant man. You know everything. Tell me."

Today almost every physician, even one who practices in a semi-civilized spot in America, faces patients who know, or think they know, more about many matters than their physician can possibly know. One doctor, a general practitioner, recently was heard to comment on how disturbing it could be to observe how learned his patients could appear to be, even about medical matters. He explained that some of them attempted to by-pass his knowledge and skills, diagnosing their ailment, going directly to a designated specialist, and paying only the one bill! Later in the discussion a specialist remarked how some of his patients, in their pseudo-sophistication, prescribe their own treatment—"A little penicillin, please, Doctor." Such instances are extreme, to be sure, but the fact is clear that contemporary Americans, when compared with their grandparents, are increasingly sophisticated and critical about the medical services they receive.

A third broad change affecting the health field is what has been called the commercialization of the professions. At a former time the services of persons in the professions seemed, in a sense, "beyond price." Now the public is coming to see in the professionals, and they appear to perceive in themselves, less of the image of a dedicated servant of the people and more of the air of an astute business man. This is true of professors as of other professionals. Noteworthy instances once were cited of

consecrated men standing for and standing by ideas and ideals of service to humanity, and abhorring the market-place. Many educational institutions gloried in campus characters, firm, professionalized and dedicated, who could not be "moved" by financial offers doubling or tripling their incomes. Such professionals acquired halos and especially in the field of medicine. With the spread of commercialism, these halos are fading for all professionals. Three recent books serve as eye-openers on this subject: *The Academic Market-place* which describes how young professors get their positions and promotions; *The Doctor's Business* which portrays the same market-place approach; and *The Image Merchants* which reflects the superficial, cash-and-carry tactics and philosophy of modern public relations agencies. Under the rising tide of commercialism in America, one may wonder how long even the closely-knit religious orders will be able to preserve much of the image of the dedicated professional that is the heritage of our past. Most professionals, including physicians who are now sometimes labeled "merchants of medicine," are viewed more and more as human beings with typical frailties, but trained and practiced in some marketable skill. This new attitude certainly affects the relationship of the physician to his patient, the nurse to the physician and the patient, and each one of them to the other professionals. The patient or his responsible relative is perhaps made to feel most aware of this commercialized impact upon his welfare. Recently I received a letter from an old acquaintance that read, "We took father to the hospital for ten days. He came out with a small patch on his hip and a \$1000 hole in his pocket."

A fourth change of great significance is the shift in age composition and prevalence of disease in the American population, with communicable diseases declining and long-term illnesses gaining. In coping with communicable diseases health professionals did things mostly *to* or *for* patients; with long-term illness they have to rely more on the continuous cooperation from the patient or his relatives and often beyond the reach of effective supervision. Such a situation calls for new forms of staff-patient relations.

In the fifth place, there is a transition in American thought from a religious-philosophical orientation toward a materialistic and scientific attitude to life and its problems. We are oversold on the idea that science can do almost anything for us—and then find ourselves distraught by the fact of its limitations. Outside its legitimate bounds, the scientific approach alone provides little help and cold comfort: and its limits are always reached in matters of health.

To me it has appeared many times in hospital relations that a major gap occurs between the confidence, attention, support, and even availability of staff services to the patient's body and to the person himself, and this contrast in relationship is especially pronounced when further hope does not exist for survival of the body. The way the average staff copes with the necessity of dying and the problems of bereavement leaves much to be desired and often appears no less than dismal. Indeed, there are grounds for wondering whether most hospitals are suitable places in which to die with any assurance of personal composure and dignity. A sensitive-minded and high medical authority writes:

Most hospital deaths are anything but dignified and the family cannot even get into the room for the oxygen tent, intravenous stands, suction machines, and the sundry rubber tubes protruding from all bodily orifices. Recently a former surgical patient came to the hospital with what bade fair to be his final coronary occlusion. At the time of his death, the wife was across the hall in another room where she had been sent against her wishes to make room for the oxygen tent and technician regulating it; the laboratory technician drawing blood for various chemical tests; the cardiologist, his resident and intern all feeling the pulse or trying to listen to the heart; a nurse giving morphine by hypodermic needle; and a doctor injecting adrenalin into the heart. The scene of confusion was terminated only by the patient's demise . . . The wife was well within her rights to feel cheated out of her last goodbye and to feel hurt at the lack of dignity, propriety, and awareness shown by the medical team. (Bowers, *Interpersonal Relations in the Hospital*, 1960, p. 40.)

Finally, a sixth broad outside change that I wish to call to your attention, is the

growth and spread of organized interest groups. Americans have become a highly organized people, with such groups as organized labor, organized producers and consumers, organized salesmen of goods, and organized professionals. It looks as though it is becoming for us, organize or perish. The union card of a close-knit organization with its pressure apparatus and bargaining techniques and powers seems all but a necessity now for getting our needs, our rights or our dues recognized, at least as we see them. Witness, for example, governments, unions, and other organized interests that are engaged in bargaining for medical personnel, and trying out their own systems of medical care. Must patients, too, organize in order to cope with organizations? I once observed the formation of a union of patients on a ward service. It had its president and vice-president, its secretary, and its grievance committee.

CHANGES INSIDE THE HOSPITAL

But change occurs within as well as outside the hospital system. Permit the cataloging of a few of these.

First to consider is the vast expansion of medical equipment or armamentarium as it is sometimes called. Hospital service has become a giant enterprise, especially when compared to the horse-and-buggy and the little-black-bag that were the stocks-in-trade for the yesteryears. In capital outlay for plant and equipment alone, it has come to rate high up in the order (sixth or seventh) of the country's business investments. Needless to say, the skills, functions, and relationships of professional workers in the field of health have had to keep pace with the expansion in equipment and techniques. Under such conditions medical personnel have tended to become attendants to gadgets and documents as much as or more than to patients directly, and, in the eyes of the patient, doctors and nurses resort more and more to forms of remote control in their ministrations.

In the second place, there is considerable elaboration in the institutionalized routines of hospital services that resemble production-line developments in industry. To a significant degree doctors, nurses, and other personnel have become as cog units in an

evermore tightly structured system. Personnel "run mazes" that pattern their behavior, and perhaps their ways of thinking and feeling about each other and their patients. The freedom of the physician is thereby restricted, the ingenuity of the nurse is limited, and the patient feels that his personal characteristics and interests are stereotyped, slurred over, neglected or squelched. It is now common to speak of the "structure and culture" of a hospital as a phenomenon which, in important respects, is distinct and different from the social structure and culture of the community that surrounds it. It has become part of the task of social scientists to study the institutionalized medical system as such to discover when and where interpersonal conflicts and stresses between medical personnel and patients are primarily the consequence of the system rather than of individual idiosyncracies.

A third change within the hospital has been the rapid increase in the use of professional and para-professional specialties in varied types of patient services. As many as 38 different personnel have been counted as busy about something in a patient's room in a single day. Incidentally a colleague of mine left with one patient a recording machine with instructions for the patient to turn it on and record all that was said to him. An analysis of the record showed that no words at all were passed between the patient and some "attendants" and that most time spent in communication had been with the cleaning woman.

The hospital remains much in the throes of readapting patient care in terms of an increasing host of "specialists" coming and going around the bedside. To these the patient is expected to adapt, chameleon-like, to each in turn. If the patient sustains sufficient composure to observe carefully what goes on around him, he may recognize two types of specialists. There are the professional specialists who have learned more and more about less and less in ailing bodies. They are the experts, and are indispensable and expensive. Then there are the factory-type "specialists" that have been quickly trained with just enough practice to do simplified tasks passably well and under the authority of others. These

"trained ancillaries" have invaded many ranks of hospital personnel and are pressing for prerogatives—and it turns out that they are not inexpensive, especially as they organize union-wise. Such a spawning of professional and para-professional specialism around the patient is a product of our times and constitutes, as yet, unresolved problems in the application of good patient care.

Specialization of both types, with the splitting up of responsibility, leads to a fourth significant factor in the modern hospital. A natural component of specialization is the fragmentation of personal service and with a corresponding pin-pointing of blame within the linked segments of responsibility. It has long been puzzling to me how quickly and precisely the finger of blame is pointed in the hospital. One might wonder if evil motives are attributed more readily in hospitals than elsewhere or if the personnel mistrust each other more than is usual in other environments. Then it might dawn upon one that the practice of blaming personnel is a built-in and cultivated part of the system. It may help to insure discipline but it aids little in the understanding of individual behavior and its effects upon the welfare of the patient.

The phenomenon of blame, and its corresponding guilt complexes and precautionary measures deserves considerable systematic study.

A fifth change to note here is the rapid growth of prepayment plans, group medical practice, and greater involvement of governments in the safeguarding of our health. These three developments carry potentials for profound modifications in staff-patient relations. Refusal to accept patients, threats of discharge, or a label of "discharged against advice," may be "in order" if the patient is a "charity case" or if he is a private patient paying his way on the spot; but these practices carry sour, unfair, and intolerable connotations when the patient has been paying for his hospital care over a period of 10, 15, or 20 years. Moreover, prepayment would seem to call for more attention to personalized patient care.

Consider also the spread of group practice across the country—developments that are tending to combine "packaged bargains"

in patient care through extensions of health services by cooperating specialists. This movement is bound to affect the old hospital-patient relations.

Likewise, the commitments of the federal government to increasing amounts of the health services for expanding segments of the population creates new sets of conditions—and something like a third-party relationship within the old associations—and with both assets and liabilities. Some estimates are that government-sponsored health services in America now cover in some form as much as half or more of the total population.

A sixth and final important change occurring within the hospital and health field is the expanding perspectives on medical care or what constitutes good patient care. The older perspectives focussed on the treatment of acute illnesses; and the hospital first flourished in the care of the emergency ailments, for the mentally ill, and for indigent persons.

Our new medical horizon has vastly enlarged. What has happened is that the concept of patient care has been expanded greatly: to preventive measures on the one hand and rehabilitation on the other. Moreover the views on good patient care throughout the spectrum have been deepened to include whatever the varied specialists can contribute to the welfare of the patient, and this calls for a new kind of team work. To try to fit such contemporary concepts into the traditional pattern of patient care resembles, figuratively, attempting to fill weak, old wineskins with the new, strong wines.

In searching for clarity on the new goals of patient care that the health professionals of tomorrow may be committed to, I came across a useful recent book, *Readings in Medical Care*, edited by a Committee on Medical Care Teachings of the Association of Teachers of Preventive Medicine (1959). Dr. Roger Lee, and Mrs. Lotus Jones in one chapter make the emerging goals of patient care both positive and specific. They are to the effect that good medical care will:

limit itself to the practice of rational medicine based on the medical sciences;
emphasize prevention;

require intelligent cooperation between the lay public and the practitioners;
treat the individual as a whole;
maintain a close and continuing personal relation between physician and patient;
utilize and collaborate with social welfare work;
coordinate all types of medical service; and
make application of all the necessary services of modern scientific medicine to the needs of all the people.

If such is truly in the offing for us, then we laymen have good reason to lift up our heads with hope.

SUMMARY

In summary of the impact of contemporary changes on medical personnel and patient care:

We have saluted medical-hospital staffs for what they now offer for the health and welfare of potential patients.

We faced frankly the great lag between what actually is done and what could be done by a full use of available knowledge and skills.

We called attention to the fact that lay dissatisfaction increases and presses for improvements—and may press harder on the health professionals in the future.

We anticipated that many improvements in patient care can come by means of better application of the existing knowledge and skills.

We expected, also, that improvements in hospital practice are bound to come in one way or another—that in the end society will probably have its way. So we are not pessimists.

We anticipated, on the other hand, that such progress in patient care will occur in the face of some opposition on the part of many potential patients and we hoped, by implication, that systematic study of the social factors involved may speed the orderly progress of hospital-patient relationships.

We have called attention to six broad changes in the social order that have some bearing on medical trends and staff-patient relationships: population mobility—horizontal and vertical; general lay sophistication; commercialization of the professions; shifts in age composition and disease preva-

lence in the population; changes from a religious-philosophical toward a scientific orientation; and the growth and spread of organized pressure groups.

We have also identified specific changes within medical-hospital practice: vast expansion of equipment and capital investment; growth of institutionalization; increase of specialization (professional and para-professional); the fragmentation of responsibility and sharpening of blame potentials; the rapid growth of prepayment plans, group medical practice, and participation of the government in provisions of medical care.

Attention was called also to the fact that new and more challenging concepts of patient care have arisen, expanding the old ideas in comprehensive terms: adding preventive and rehabilitative care to care in the acute stages of illness; calling for team relationships in decision-making and practice; and moving towards group responsi-

bility for the well-being of potential patients.

The impact of such trends and developments on the new physician, the hospital of tomorrow, and patient care of the future will probably be great, however difficult to foresee or to measure now. In a sense we find in the present hospital a "house divided in itself." We hold little hope that smoother "public relations" goes down deep enough to resolve many of these change-determined cleavages. They call for statesmanship in hospital practice more than for salesmanship in hospital service. Your psychiatric skills are much needed in the general hospitals. Not your profundities, mind you, but your simple, tried, and tested principles.

Finally, how interesting it would be to return to this place and to review again these matters twenty or thirty years hence when today's students in the health professions have come to occupy your present important places—and our children are their patients.

STUDIES OF BEHAVIOR AND THE METABOLISM OF INDOLE DERIVATIVES IN SCHIZOPHRENIA^{1, 2}

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MELVIN J. GORTATOWSKI, Ph.D., AND C. H. HARDIN BRANCH, M.D.³

Historically, psychiatric interest in the indole nucleus probably dates back to the original demonstration of the role that nicotinamide and its precursor tryptophane play in producing the pellagrous syndrome of dermatitis, diarrhoea, and dementia. This interest was revived in 1953 when quantities of serotonin (5-hydroxytryptamine), an indole structure, were found in normal brain substance(21). Since then, studies which have outlined the distribution of serotonin in grey matter(3, 4), especially its relationship to such neurohormonal substances as noradrenalin(2, 5), and its high metabolic turnover rate(6), have combined to provoke further interest in indoles. In addition, the recent finding that serotonin, along with noradrenalin and adrenalin, is a strong synaptic inhibitor lends further credence to the possible importance of indole derivatives in mental functioning(7).

The observation(8) that structural analogues to serotonin have a "schizophrenogenic" effect on mental functioning has led to the proposition that some of the hallucinogenic drugs owe their effect to interference with the function of serotonin(9); this proposition is consistent with an anti-metabolite theory of action. Of course, from this observation, speculation has extended to the idea that there may be psychiatric entities whose pathology is based upon some metabolic dysfunction of indole com-

pounds. The demonstration by Gaddum (10) that d-lysergic acid was a serotonin antagonist in vitro did much to further this interest. At the present time, there is a sizable list of chemical materials that are suspected to be either antimetabolites of serotonin in vitro, or psychotogenic, or both(11-22). These are presented in Figures 1 and 2. Note that many of these compounds contain the indole nucleus.

As will be also noted in Figure 2, some of the tranquilizing drugs are implicated in the activity of serotonin. In animal studies, the Rauwolfia derivatives have been demonstrated to cause depletion of brain serotonin(23-25). The phenothiazine derivatives have been shown to block serotonin in vitro, with this blocking ability seeming to parallel their psycho-sedative potency in vivo(14, 15). Iproniazid(26, 27) also plays a role in serotonin metabolism by blocking its degradation; and the administration of iproniazid leads to increased levels of both serotonin and norepinephrine in brain tissue. Lastly, many of the effective antiepileptic drugs(25, 28), e.g., dilantin, mesantoin, etc., are now implicated in raising brain content of serotonin.

These findings have provoked a number of clinical investigations(29-36), which have largely centered around a search for metabolic differences in tryptophane metabolism between psychiatric patients and normal subjects. Some researches affirm differences in indole excretion, others negate it. Our interest in these derivatives began in 1954, when Dr. Marvin Armstrong, biochemist, at the University of Utah College of Medicine observed that mentally defective patients were excreting two unidentified indole acids which were not present in the urine of normal subjects. He later observed the presence of these compounds in the urine of schizophrenic patients. These observations were augmented by studies which showed that one of these indole derivatives, "spot 14," was present more often in schizophrenic and other psychiatric patients than

¹ Read at the 116th annual meeting of the American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

² The first report of these studies was presented at the Western Regional Psychiatric Meetings, American Psychiatric Association, September, 1959. These studies were supported by U.S.P.H.S. Grant #M-1165 and by Scottish Rite Foundation Funds. The authors wish to express their indebtedness for the invaluable aid given this project by John D. Benjamin, M.D., Dept. of Psychiatry, University of Colorado School of Medicine, who kindly acted as consultant.

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in normal control subjects. These findings suggested a possible relationship between indole excretion and mental disorders and prompted the present investigation. The ultimate goals of our project were : (a) to examine the nature of the above findings, (b) to explore the psychiatric and psychological correlates of the compound, and (c) to identify the chemical nature of the compound.

PROCEDURES AND RESULTS

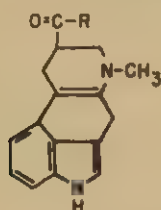
It is obvious that several variables could be hypothesized to account for the differential presence of the indole derivatives and to serve as possible explanation of the source of variance. These variables include diet, medical and other treatment, length of illness, length of hospitalization, physical activity, bowel activity, *etc.* However, pre-

liminary screening of the effect of EST and other drug therapies, and the effect of institutionalization *per se* in chronic medical patients, did not appear to have a bearing on the observed indole differences.

The next step was to determine whether or not the original findings of the indole-schizophrenia relationship would be sustained with a better controlled sample. Using a "blind" procedure, psychiatric patients and controls were evaluated independently by the biochemist and the psychiatric team. The general procedure was to collect an early morning urine specimen which was coded and turned over to the biochemist. Each subject then received a psychiatric evaluation, followed by psychological testing.

The chemical technique was a modification of the procedure outlined by Arm-

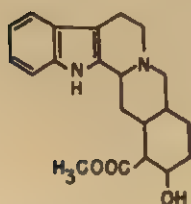
ANTI-METABOLITES OF SEROTONIN



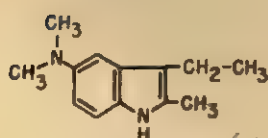
Ergot alkaloids

(ergotamine, LSD, etc.)

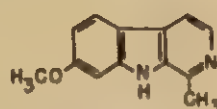
& B.O.L. 148



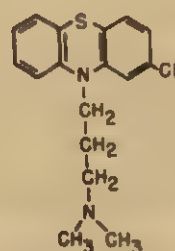
Yohimbine



Medmain

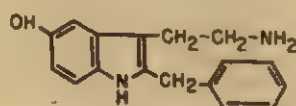


Harmine



Chlorpromazine

(& other phenothiazine derivatives)



B.A.S.

(benzyl analog of serotonin - Woolley)

FIGURE 1

strong(37). Using morning samples, urine was acidified and extracted with organic solvents, and the extracts were subjected to two-dimensional paper chromatography. On spraying the chromatogram with Ehrlich's reagent (p-dimethyl aminobenzaldehyde), the indoles produced color compounds as discrete spots, varying from pink to purple and blue. The two indole spots in question in this investigation were numbered 14 and 15 and are blue and light purple, respectively.

Figure 3 depicts the approximate location of these spots on a chromatogram. Our main attention was turned to spot 14, since

it is the one that appears most discretely and is usually not obscured by drugs ingested by the patient. Rating of indole level was done by visual inspection; scale values ranged from negative to plus 4, depending on color intensity and size of spot.

The psychiatric evaluation consisted of a joint clinical interview conducted by two psychiatrists, with each psychiatrist independently completing a 46-item rating form and arriving consensually at a diagnosis.

The psychological testing consisted of a battery of standard and experimental tests measuring various aspects of cognitive

HALLUCINOGENIC (PSYCHOTOGENIC) DRUGS

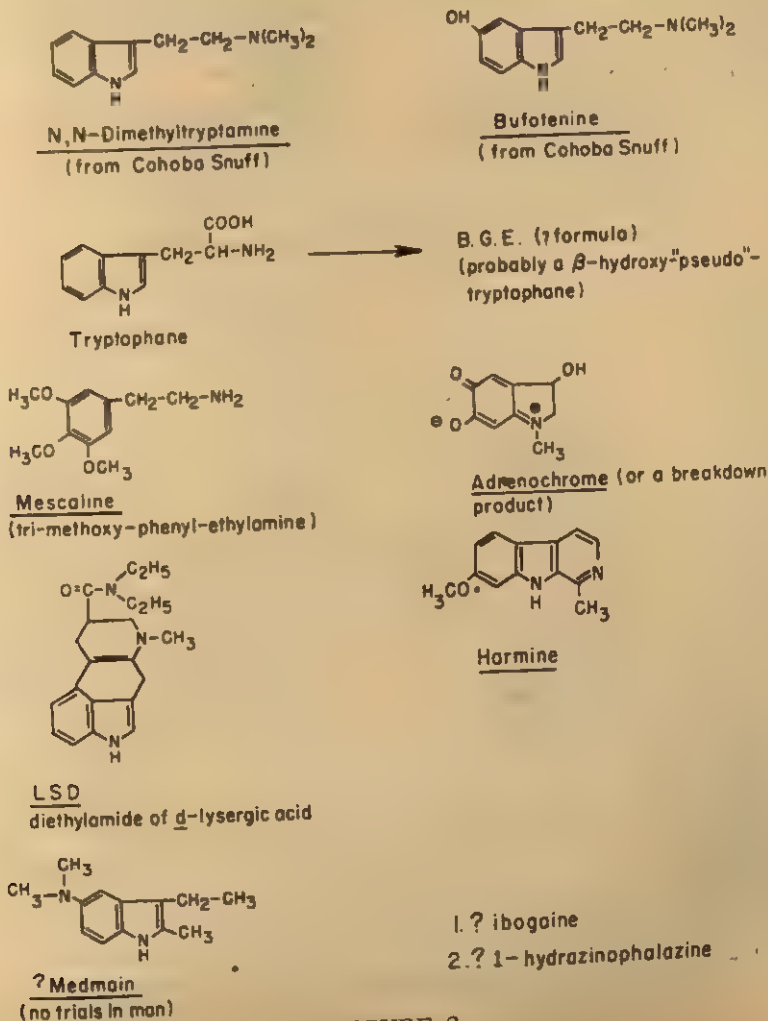


FIGURE 2

functioning, such as verbal intelligence, perception, and thought organization. The tests were all administered individually.

One hundred and thirty-five subjects were evaluated independently by the biochemist, psychiatrists, and psychologists. When the blind procedure was broken, analysis still indicated a significant relationship between indole excretion and schizophrenia, thus supporting the original findings. These findings are presented in Table 1.

TABLE 1
INCIDENCE RATES OF POSITIVE INDOLES

	(Original Data) Preliminary Data	(Replicated Data) Project Data
Control Subjects	12% (95)	31% (86)
Non-schizophrenic Psychiatric Patients	55% (31)	26% (19)
Schizophrenic Patients	67% (59)	63% (30)

Table 1 compares the original findings with the replication data. It is to be noted that roughly 2 out of 3 of the schizophrenic patients were indole positive, as compared to 1 out of 3 of other non-schizophrenic psychiatric patients and control subjects. Such factors as length of hospitalization, duration of illness, medications or physical activity did not appear to be significantly related to the indole status.

The relationships between indole status and various psychiatric and psychological variables were determined after about 90 subjects had been processed. The blind procedure was removed at this time in order that the direction of future plans could be assessed. Although 90 subjects had been seen, complete data were available for only 72 subjects. These data were obtained from 30 negative control subjects, 17 positive control subjects, 15 positive psychiatric patients, and 10 negative psychiatric patients.

Fifteen variables were selected and a

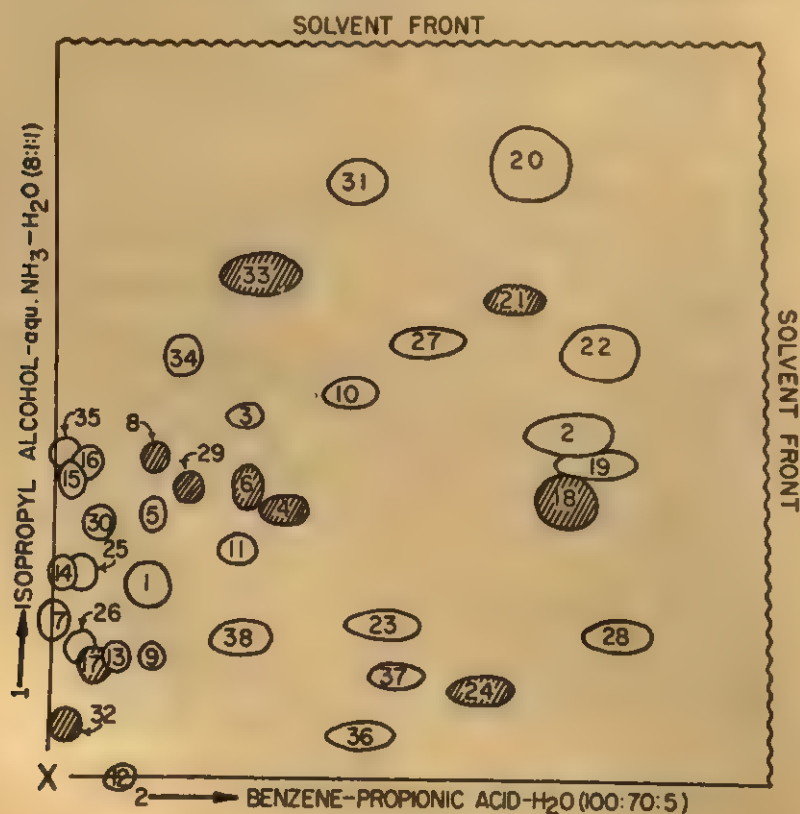


FIGURE 3

matrix of intercorrelations was computed. The 15 selected variables included indole status, age, scores on the verbal subtests of the Wechsler Adult Intelligence Scale, a pathology score from the Two-dimensional Semantic Differential (which we have developed and believe measures disturbances in thinking), global clinical ratings of thought disorders based upon Benjamin's Proverbs and the Rorschach, scores on two perceptual closure tests (Gestalt Completion and Mutilated Words), and psychiatric ratings of the mode of problem solving and schizophrenic status. The correlations between indole status and each of the remaining variables are presented in Table 2.

TABLE 2
CORRELATIONS BETWEEN INDOLE STATUS
AND SELECTED VARIABLES

Variable	Correlation
Age	.08
WAIS verbal subtests :	
Information	-.21
Comprehension	-.25
Arithmetic	-.23
Similarities	-.30
Digit Span	-.15
Vocabulary	-.08
Semantic Differential	.32
Proverbs (rated for thought disorder)	.31
Rorschach (rated for thought disorder)	.15
Gestalt Completion	-.11
Mutilated Words	-.16
Solves problems via fantasy	.22
Schizophrenic diagnosis	.42

The signs of the correlation coefficients presented in Table 2 would suggest that psychiatric and control subjects who were negative with respect to indole excretion performed intellectual tasks better and had less pathology in other areas than patients or control subjects who were indole positive. However, only 4 of the variables had correlations which approached adequate confidence levels. These variables included Similarities, Semantic Differential, and the Proverbs and were so related to indole status that a tentative interpretation was made that the excretion of indoles was perhaps associated with a disturbance in thinking. The highest correlation with indole status was obtained from the diagnosis, which expressed once again the relationship

between indole excretion and schizophrenia.

The chemical procedure, upon which the foregoing findings depend, was originally based upon acidification of urine prior to extraction for indole compounds. Studies on the variation of indole level, for a given sample of urine, with careful adjustment of pH, have shown that optimal extraction occurs at a pH of 2.5; at a pH above or below this point, the amount of indoles removed by the solvent decreases. These results are presented in Figure 4.

This demonstration led to a refinement in the biochemical techniques which followed specifically an extraction pH of 2.5, and also led to an alteration in the interpretation of differences in indole excretion between schizophrenics and normal subjects.

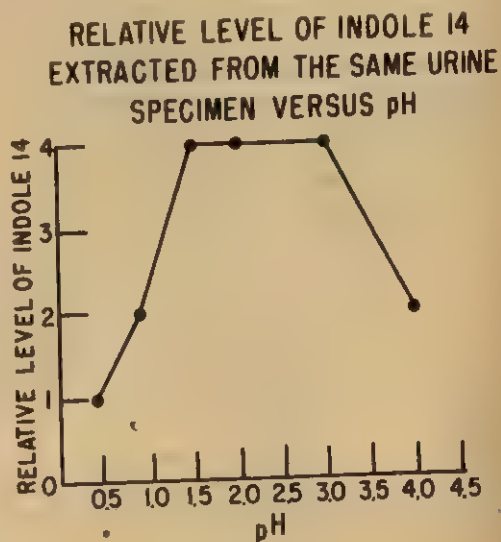


FIGURE 4

In view of the apparent dependence of indole level upon the pH adjustment of the urine, the same control group of subjects, which had previously shown the 31% indole positive incidence, was reexamined, using new collections of urine. Most of the controls who were initially positive remained positive, but two out of three of the formerly negative controls became positive. Thus, the normal controls now showed a 75% indole positive incidence with the pH adjustment of the urine to 2.5 prior to

extraction. Using the same technique, it was found that a new group of schizophrenic patients maintained a 67% indole positive status. In other words, the apparent difference between schizophrenics and control subjects no longer existed.

Before the pH modification of the extraction procedure, the most obvious factors that might have explained the above apparent relationship were dietary differences and/or bowel motility, with the possibility that spot 14 represented a product of the activity of intestinal flora. To assess these factors, a group of 19 schizophrenic patients and 8 normal controls were maintained on the same hospital diet for a continuous period of 26 days. Patients and controls ate all meals together. A detailed record of individual dietary differences was kept. On the second day, a 24-hour urine specimen was collected. Beginning on the third day, two grams of achromycin per day, for a total of 5 days, were administered orally to sterilize the gastrointestinal tract. After withdrawal of the antibiotic, a 24-hour urine specimen was collected on the 1st, 5th, 8th, 12th, 15th, and 19th days.

The first column of figures in Table 3 shows the distribution of positive and nega-

tive indole 14 status before achromycin administration. It should be noted that a level of plus 1 or more was regarded as positive and less than plus 1 as negative. On the first day of achromycin withdrawal, the number of subjects excreting indole 14 decreased. This was the case for both normal controls and schizophrenic patients. Gradually, however, the indole 14 status returned to nearly the pre-achromycin level. About 70% of the entire group of 27 subjects, however, showed a change from positive to negative indole 14 excretion with achromycin administration and back to positive within two weeks after discontinuing the drug.

The failure of complete abolishment of indole 14 excretion on treatment with achromycin could possibly be explained on the basis that (a) a previous history of antibiotic treatment of the subject could lead to the presence of resistant strains of the indole 14-producing bacteria; (b) lowered bowel motility results in more bacterial putrefaction, and (c) general physical health and appetite would alter dietary intake.

The data are examined in more detail as shown in Table 4.

TABLE 3
NUMBER EXCRETING INDOLE 14 BEFORE AND AFTER ACHROMYCIN

Subject	Indole 14 Status	Pre-achromycin 2nd Day on Diet	Post-achromycin (Days)					
			1	5	8	12	15	19
Controls (8)	Positive	5	2	3	2	5	7	6
	Negative	3	6	5	6	3	1	2
Patients (19)	Positive	14	7	8	10	15	16	13
	Negative	5	13	11	9	4	3	5

TABLE 4
PERCENT EXCRETING INDOLE 14 BEFORE AND AFTER ACHROMYCIN

Subject	Indole 14 Level	Pre-achromycin 2nd Day on Diet	Post-achromycin (Days)					
			1	5	8	12	15	19
Controls (8)	Negative	37	75	63	75	38	13	25
	+1	25	25	38	25	25	25	38
	+2	13	0	0	0	38	50	38
	+3	25	0	0	0	0	13	0
	+4	0	0	0	0	0	0	0
Patients (19)	Negative	26	69	58	47	21	16	28
	+1	21	26	37	37	37	32	11
	+2	32	5	5	16	21	21	22
	+3	16	0	0	0	16	16	28
	+4	5	0	0	0	5	16	11

It can be observed that in general the schizophrenic patients achieved higher levels of indole 14 excretion than the normal controls within the same length of time (a little over two weeks). Also the patients showed generally higher levels of indole 14 than the normal controls both before and after achromycin. Similarly, in the recheck data where the apparent relationship of the indole-schizophrenia relationship disappeared, it was still found that schizophrenic patients tended to excrete greater quantities of spot 14 than the controls.

If plotted on a graph, the difference might be portrayed as illustrated in Figure 5.

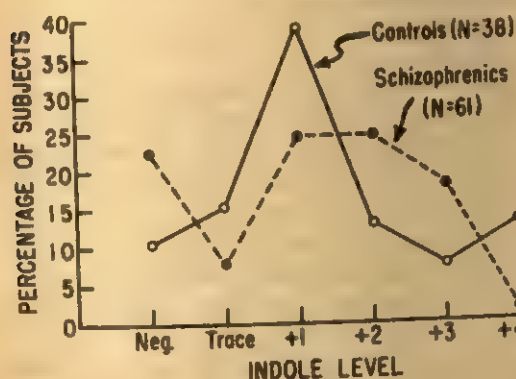


FIGURE 5

Actually two types of differences are present between schizophrenics and controls. In the first place, higher excretion levels are generally observed in schizophrenics. Also, schizophrenics show greater variability in excretion levels as compared to controls.

The most probable explanation for these differences in excretion of spot 14 is one of bowel stasis. Constipated individuals regularly throughout the study showed higher excretion rates of this indole compound. If one adds to this fact the probable change in autonomic nervous system activity with psychic disturbance and/or changes in habits of exercise, decreased bowel motility might account for the variable excretion rates found in schizophrenic patients.

Biochemical efforts throughout this

study⁴ have been directed toward eventual identification of spot 14. Armstrong⁵ has identified spot 14 as indoxyl glucuronide and found it to be a normal metabolic product resulting from bacterial putrefaction in the gastro-intestinal tract.

SUMMARY

1. Urinary indole excretion of spot 14 appears to depend upon the presence of certain bacterial flora in the gut.

2. When extraction of urine for chromatographic examination is carried out at pH 2.5, there appears to be no direct relationship between the appearance of indole 14 in the urine and the mental status classified as schizophrenia.

3. From the dietary drug studies reported, we would conclude that the probable source of this indole derivative that was examined (spot 14) is from bacterial flora acting upon certain dietary substances in the gut.

As Benjamin, Kety (38, 9), and others have pointed out, the area of psychiatric research to date which has a rather fruitless history is the search for definite and discrete biological abnormalities as presumed etiological factors in the development of the schizophrenias. In the main, when rigid controls have been maintained and research design has allowed for examination of all possibilities, an expected primary causal relationship generally fades into being a secondary manifestation of factors intrinsic to the diagnosis of schizophrenia, such as dietary differences, institutionalization, behavioral differences, and so forth. This has been well illustrated recently by the fate, for example, of interest in ceruloplasmin (28, 39) and in phenolic acid excretion (40). In the author's opinion, the particular indole compound we have studied, i.e., "spot 14," can be included in the above category.

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⁴ The authors wish to express grateful acknowledgment for the technical assistance of Clinton Faber. We are also indebted to John P. Rollins, M. D. and to the personnel at the Veterans Administration Hospital for their cooperation in this study.

⁵ Private communication.

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STEPS TOWARD THE ISOLATION OF A SERUM FACTOR IN SCHIZOPHRENIA^{1, 2}

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The presumption that some types of schizophrenia may be related to inborn or acquired metabolic errors has been cyclically popular since the time of Kraepelin. As a result of this presumption, many investigations searching for a toxic metabolic factor have been made. Early studies led to no definite delineation of any such defect. A resurgence of metabolic research has occurred during the past decade due to improved methodology and instrumentation in both biochemistry and neurophysiology. The psychotomimetic drugs have also contributed to enthusiasm for biochemical research prompted by their ability to produce symptoms approximating those occurring in schizophrenia. Their chemical structure and action have led investigators to establish models suggesting that a central disturbance in synaptic transmitter substances such as the catechol amines may be present in schizophrenia(1). The Tulane group has reported the extraction of a substance, presumably protein, from the serum of schizophrenic patients which they called "taraxein"(2, 3). When injected into volunteer controls, a psychotic response ensued, characterized by difficulty in thinking and depersonalization. When given to monkeys with electrodes implanted in the septal area of the brain, they showed behavior resembling catatonia and developed slow waves in their EEG's. It should be mentioned that other centers in this country have not been able to duplicate this work(4, 5), although a Swedish(6) group has reported experimental verification with taraxein. Rather than being a simple protein, it would seem

that taraxein is a mixture of as yet unrefined globulin components(7). Freedman and Ginsberg(8) did exchange transfusions between 4 schizophrenic patients and 3 normal adults and produced no significant clinical changes in either group. Winters and Flataker(9) found that rope climbing rats lost their agility when injected intraperitoneally with whole serum from schizophrenic patients. Plants and tissue cultures have been incubated with schizophrenic serum in an attempt to assay growth inhibition or acceleration. The results again have been controversial(10). Luby *et al.*(11) have been unable to demonstrate differences between blood from schizophrenic patients and control subjects using several standard plants bioassay tests exceedingly sensitive to the presence of indolic compounds. Federoff(12), using cultures from strain L mouse cells, reported toxicity highest with the serum of schizophrenic patients as opposed to the serum of normal subjects and surgical patients. Similarly, Martin and Kost(13) demonstrated marked effects of schizophrenic serum on tissue cultures of HeLa cells, even suggesting that their technique might be used as a diagnostic test. Unusual indolic compounds have been discovered in the urine of schizophrenic patients with paper chromatography; McGeer *et al.*(14, 15) reported a number of unusual amines not found in normal urine. To the contrary Cafruny and Domino(16) showed a decreased incidence of a hydroxyindole-like material in the urine of schizophrenic patients. Bercel(17) studied the influence of schizophrenic serum on the behavior of the spider and found that serum from two-thirds of the catatonic cases produced a rudimentary type of web. Serum from other schizophrenic groups and normal subjects had little influence in changing the web patterns. The importance of diet in such studies cannot be overestimated, as evidenced by Kety's(18) obser-

¹ Read at the 116th annual meeting of the American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

² Grants-in-Aid from the National Association for Mental Health and the Scottish Rite Committee for Research on Schizophrenia were of assistance in this study.

³ Lafayette Clinic, Detroit, Mich. and Wayne State University, College of Medicine.

vation that these so-called abnormal indoles are related to coffee ingestion.

Studies at the Lafayette Clinic have concentrated on intermediary carbohydrate metabolism(19, 20, 21). A defect in the mechanisms associated with energy regulation was found in the chronic schizophrenic population manifested by an inability to mobilize adenosine triphosphate as an adaptive response to a stressor. Further work revealed that patients stressed with insulin could not shift their utilization of glucose to a portion of the carbohydrate metabolic scheme yielding greater energy production. It became important to know whether this was an enzymatic defect within the cell, or the result of an extracellular inhibitor substance. Crossover experiments incubating the plasma from patients with the erythrocytes of control subjects and vice versa clearly demonstrated that the substance was extracellular and in the plasma of the patients(22). The effects of plasma from patients on oxidative metabolism of chicken erythrocytes was also investigated(23). Plasma from patients produced a more anaerobic form of metabolism than plasma from control subjects.

These experimental results might be interpreted in a number of ways. They suggest that a compound in the plasma acts to prevent more effective utilization of glucose for energy under conditions of stress. Such a factor might be a normal metabolite found in excess in the patient's plasma or else an abnormal metabolite present only in the patient.

This paper is a report of the initial attempts to isolate and determine the chemical structure and mechanism of action of this plasma factor which produces these disturbances in carbohydrate and energy metabolism.

METHODS OF INVESTIGATION AND RESULTS

The three investigatory steps and the procedures for partial identification that have been used so far in order to isolate the factor accounting for the described metabolic defect in schizophrenia are :

1. Separation of serum into protein and non-protein fractions by ultrafiltration.

2. Electrophoretic separation of the serum proteins.

3. Further separation of the active protein fraction by column chromatography using DEAE cellulose.

In order to determine the activity of each fraction following separation, the chicken cell method(23) was used. The chicken cells are a homogeneous medium and are particularly valuable in studying glucose metabolism in that they are nucleated, and therefore catabolize glucose both anaerobically and aerobically. The non-nucleated human erythrocytes catabolize glucose without the use of the most important aerobic pathway, the tricarboxylic acid cycle. The degree of oxidation within the cell (*i.e.*, the rate of function of hydrogen transport) may be determined by measuring lactate/pyruvate ratios. Serum from schizophrenic patients produced lower pyruvate production and higher lactate/pyruvate ratios when incubated with chicken erythrocytes than did serum from control subjects. The measurement of lactate/pyruvate ratios can be used to determine the presence or absence of the "active" substance in each fraction separated. By dividing the lactate/pyruvate ratio of the fraction from the patients by that of the control subjects, one gains an index of the "activity" of the fraction of the patients. When the ratio is higher than one, it indicates an abnormal amount of activity in the schizophrenic sample. Pooled serum from chronic schizophrenic patients and control subjects was utilized for the analyses.

The methods and results for each individual step will now be described.

1. *Separation of serum into protein and non-protein fractions by ultrafiltration.*—The sera from control and schizophrenic subjects were separated into protein and non-protein portions by ultrafiltration using zinc chloride treated cellophane as the filtration membrane. The results of the lactate/pyruvate ratios for the schizophrenic and control sera are reported in Table 1. Since the abnormal activity was found in the protein portion of the serum from the schizophrenic patients, one can conclude that the active principle is of protein structure or is conjugated with a protein.

2. *Electrophoretic separation of the serum proteins.*—(a) Early protein separation pro-

cedures. A Karler Misco Curtain Electrophoresis apparatus was used in the first protein separation procedures. The buffer was 0.01 M barbiturate at pH 8.6. The serum proteins were separated into 17 fractions using 750 volts and 7 amperes. Figure 1 demonstrates the lactate/pyruvate ratios from each schizophrenic fraction divided by the lactate/pyru-

TABLE 1

MEANS OF LACTATE/PYRUVATE RATIOS FROM CHICKEN CELLS INCUBATED WITH PROTEIN AND NON-PROTEIN FRACTIONS OF SERUM FROM CONTROL SUBJECTS AND SCHIZOPHRENIC PATIENTS

	NON-PROTEIN		PROTEIN	
	Mean	Range	Mean	Range
Control	4.7	4.2-5.4	4.9	4.2- 5.7
Schizophrenic	5.0	4.4-5.7	8.6	5.9-11.2

1 cc. of fraction added to 4 cc. chicken cell mixture plus 1 cc. reconstituted dried plasma. Means are from five separate determinations.

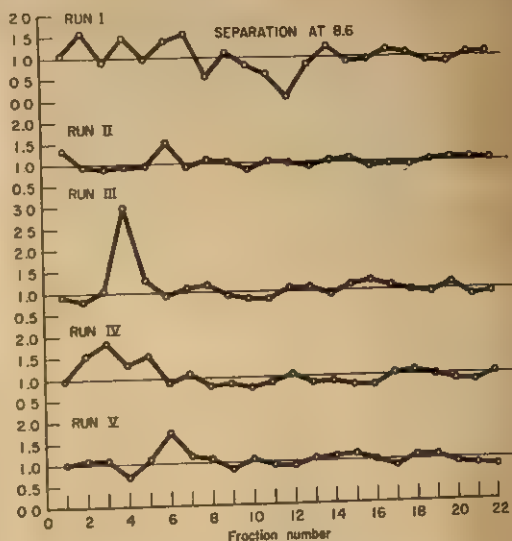


FIGURE 1
ACTIVITY OF FRACTIONS SEPARATED BY
KARLER MISCO ELECTROPHORESIS APPARATUS

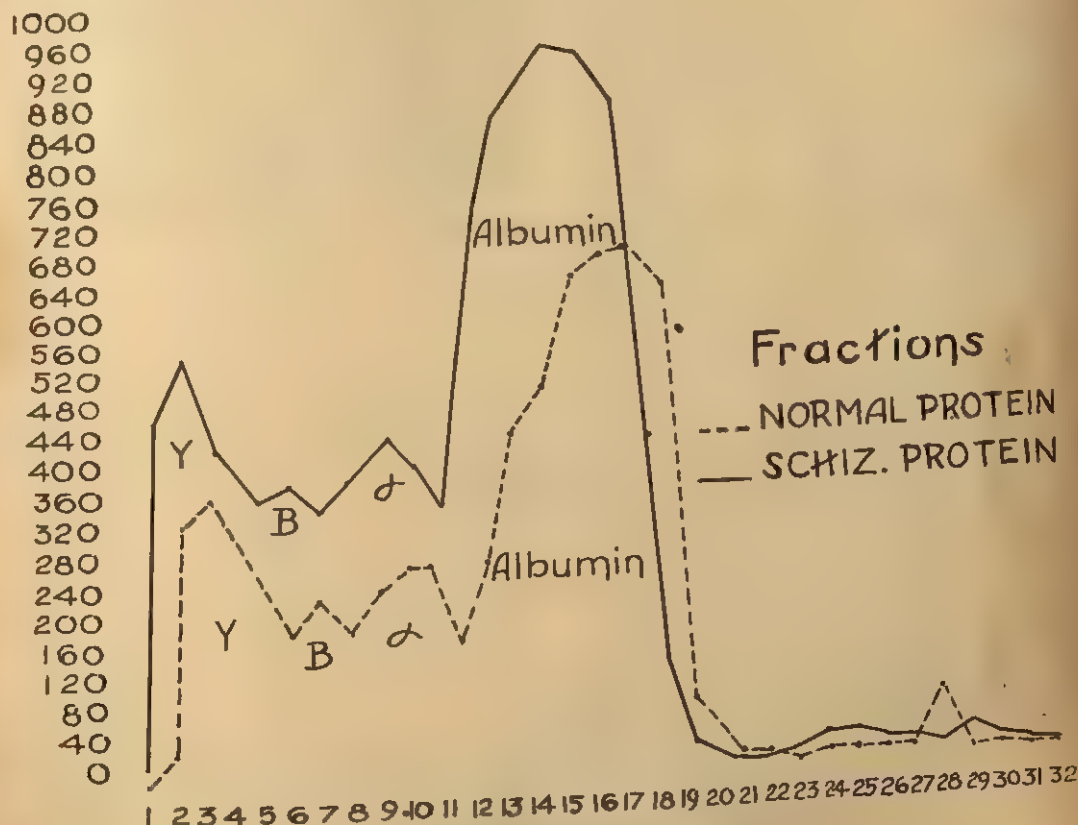


FIGURE 2
TYPICAL PROTEIN SEPARATION

vate ratios from the corresponding fraction of the control subjects. A value greater than 1 indicates an abnormally active fraction. In this figure it can be clearly seen that this fraction occurred near fraction 6. This fraction contains primarily beta-globulins.

(b) Later protein separation procedures. In order to fractionate larger quantities of serum a Beckman Spinco C. P. electrophoretic cell with a barbital buffer of 0.02 M. at a pH of 8.6 was used. This separation was accom-

plished with 900 volts and 70 amperes. A typical separation is shown in Figure 2. These protein levels were determined by the biuret method(24). With better separation of larger amounts of serum, it was then evident that "activity" was most probably coming out in the alpha globulin fraction (Figure 3). It can be seen that the most abnormal activity is around fraction 9 of the schizophrenic sample, although there is some abnormal activity in the slow gamma globulin (fractions 2 and 3).

3. *Further separation of the active protein fraction by column chromatography using DEAE cellulose.*—The method used was developed by Heath and co-workers(25). The cellulose was suspended in a large quantity of 2N.NAOH for 24 hours and separated by centrifugation. It was then washed with distilled water until the washing returned to pH7. It was then washed 5 times with 0.005M phosphate buffer at pH7, suspended in 0.005M phosphate buffer, and a column 2 inches in diameter and 20 cm. high was poured.

The sample was washed onto the column with two 50 cc portions of 0.005M phosphate buffer. It was then eluted by a gradient elution system containing 2 liters of 0.005M phosphate buffer in flask A into which is siphoned a solution containing 0.04M NaH_2PO_4 and 0.14 M NaCl. Fifty cc fractions of eluate were collected. Protein content of the fractions was determined using absorption at 280 mu. The protein concentrations of the various fractions are shown in Figure 4. Lactate/pyruvate ratios of the schizophrenic fractions divided by lac-

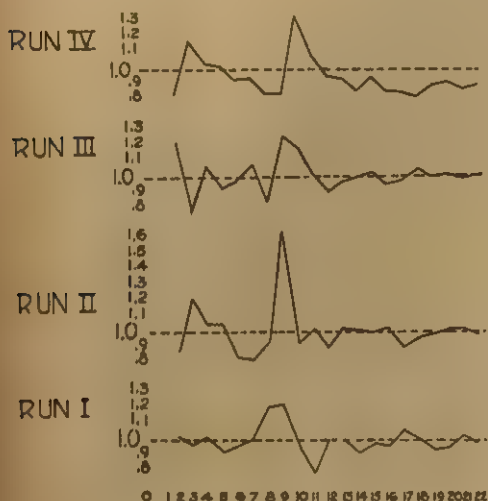


FIGURE 3

ACTIVITY OF FRACTIONS SEPARATED ON
SPINCO ELECTROPHORETIC APPARATUS



FIGURE 4

SEPARATION OF FACTOR ON DEAE CELLULOSE

TABLE 2

LACTATE/PYRUVATE FROM SCHIZOPHRENIC FRACTIONS—LACTATE/PYRUVATE FROM NORMAL FRACTIONS AFTER CHROMOTOGRAPHY ON DEAE CELLULOSE

Fraction	
I	0.968
II	0.973
III	1.83
IV	0.89

tate/pyruvate ratios of the corresponding fractions from the control serum are presented in Table 2. "Activity" was demonstrated in fraction 3 which as yet has not been identified.

Studies of the physical and chemical properties of the "active" substance.—The "active" fraction was added to chicken erythrocytes and then incubated with 1 label glucose and 6 labeled glucose and the CO₂ measured in the manner described previously. With this method, one can determine the relative amount of glucose metabolized by the Emden-Meyerhof scheme and the hexosemonophosphate

TABLE 3

CO₂ PRODUCED FROM THE 1 AND 6 CARBONS OF GLUCOSE BY CHICKEN ERYTHROCYTES INCUBATED WITH FRACTIONS FROM SCHIZOPHRENIC PLASMA

	Fraction 9	Ratio 1/6
Schizophrenic	1-6870	68.7
	6- 100	
	1-9180	
Normal	6- 70	131.0
Schizophrenic	Fraction 4 1-4035	63.0
	6- 64	
	1-4622	
Normal	6- 100	46.2

Incubation mixture consisted of 4 ml. of chicken erythrocytes suspended in equal volume of 0.9% NaCl, 5 ml. of plasma, 0.05 mc. 1-6 labeled glucose, 1.0 cc. of the appropriate fraction and 0.5 cc. of 1% glucose. Fraction 9 was already proven active by use of lactate/pyruvate ratios from chicken cells. Fraction 4 was an inactive fraction used for comparison.

shunt. Table 3 gives the results of this study, showing that the factor increased the percentage of glucose metabolized by the Emden-Meyerhof scheme, thereby decreasing the amount converted to ribose. This was the same type of reaction noted previously in plasma from control subjects when subjected to insulin stress and which occurred in the plasma of the schizophrenic patients both before and after stress.

Since the factor from the serum of the schizophrenic patient appeared to be either an alpha or beta globulin and because many of these are glycoproteins, tests for N acetyl mannose amine (sialic acid, neuraminic acid) were performed on all the separated fractions from both patients and control subjects. Sialic acid levels were determined by two independent methods, because of the lack of specificity of each method. One method employed modified Ehrlich's reagent(26) and the other method used diphenylamine(27).⁴ The levels of sialic acid per gram of protein for the various fractions from both patients and control subjects are shown in Figure 5. There is approximately 2½ times as much sialic acid in the active fraction from the patients as in the corresponding control fraction. In the other fractions there were no significant differences.

Studies of the physical properties of the active fraction reveal that it is unstable above pH 9 and below pH 6. It is most stable at 4° C. and within a few hours is destroyed at room temperature or by freezing. It can be dialyzed at pH 7.5 for 3 days at 4° C. without destruction. If a prosthetic group is involved it must be tightly bound. As was noted above, the active compound appears to be an alpha globulin or is some substance attached to an alpha globulin.

The concentration of this fraction by the methods described above was one thousand fold (7 gm. of protein gave approximately 7 mg. of the active factor). However further purifications must occur before any statement can be made regarding blood level concentration.

⁴ The sialic acid standards were supplied by Gregory Duboff, Ph.D.

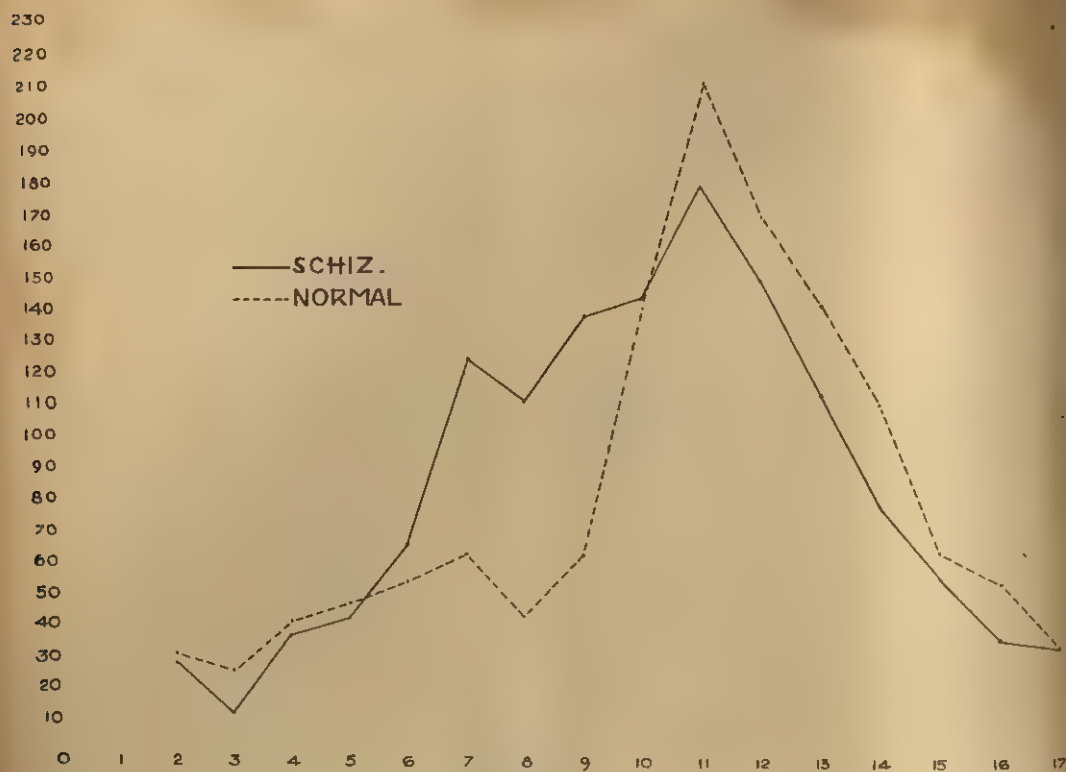


FIGURE 5
MGS. SIALIC ACID PER GRAMS PROTEIN IN VARIOUS FRACTIONS

DISCUSSION

The separation procedures have led to the isolation of a factor in the serum of schizophrenic patients which has a significant effect on metabolism as measured by lactate/pyruvate ratios in the chicken erythrocyte. The procedures employed have revealed that this substance is most probably an alpha globulin or a prosthetic group attached to an alpha globulin. It remains stable at 4° C. at a pH between 6 and 9, but is readily destroyed at room temperature and with freezing. The alpha globulin may have a prosthetic group which resembles sialic acid. The factor also stimulates energy production by forcing glucose through the Emden-Meyerhof scheme, rather than the hexosemonophosphate shunt. This is also characteristic of the plasma from schizophrenic patients. This metabolic effect is characteristically seen in control subjects under stress. This suggests that the active principle in patients with schizophrenia may reflect a disturbed

mechanism for adapting to stress. Further investigation is necessary to clarify this possibility.

What is this factor and its significance for the understanding of the schizophrenic illness? It must be emphasized that, as yet, the factor has not been identified, although several of its characteristics have been defined and its activity greatly concentrated by the separation procedures. Also, although it appears to be definitely related to the previously described metabolic defects in schizophrenia, its meaning for the production of schizophrenic symptomatology in its many diverse aspects is not known. It may be that this is a substance normally present in the serum of all individuals, but quantitatively elevated in the schizophrenic. This elevation could be due to excessive production of the substance or the inability of the schizophrenic to metabolize or detoxify it. It is possible that this factor appears in normal persons after severe stress, as suggested by the metabolic

shift from the hexosemonophosphate shunt to the Emden-Meyerhof scheme that appeared under stress in the control subjects. This, however, remains to be proved since serum of stressed control subjects has not yet been separated in the manner described for the serum of patients. Studies of this type are now in progress.

On the other hand, this factor may be an abnormal substance, never found characteristically in normal persons, which produces a significant and diverse effect on metabolic processes in the schizophrenic patient. This could be an abnormal protein, or an abnormal prosthetic group attached to a protein. It is possible that such a prosthetic group is related to sialic acid. The actions of sialic acid are unknown, but it is found in connective tissue, and more importantly as a normal constituent of the macromolecular brain gangliosides.

What is the relationship of this factor to other toxic factors reported as occurring in schizophrenia? This is in no way clear, although this factor could account for some of the results reported in other bioassay techniques, such as the rat climbing test and disturbed web patterns of spiders, that have suggested an abnormal effect of schizophrenic plasma. Taraxein may also contain this active principle. Inconsistencies in reports regarding toxicity of serum may be related to the lability of the compound in that it is so easily altered by changes in pH and temperature. Transfusion replacement studies in which the blood of a normal subject is given to replace the blood of the schizophrenic patient produces no consistent improvement. This abnormal substance most likely continues to be produced by the person with the schizophrenia and would therefore quickly prevent any replacement effects.

Much investigation remains to be done before one can understand the nature of the active factor and its significance in the pathophysiology of schizophrenia. With further isolation and definition of its characteristics, behavioral assays will assume crucial importance in determining its precise role, whether primary or secondary, in this disorder. Further research on the factor's behavioral effects and the mechanism of its action is presently underway.

SUMMARY

1. The steps in the separation of a factor in the serum of schizophrenic patients have been described.

2. This factor has a significant effect on metabolism as measured by lactate/pyruvate ratios in the chicken erythrocyte and the stimulation of energy production by forcing glucose through the Emden-Meyerhof scheme, rather than the hexosemonophosphate shunt.

3. This factor is readily affected by pH and temperature, remaining relatively stable between pH 6 and 9 at 4° C. It is probable that this is an alpha globulin or a prosthetic group attached to an alpha globulin.

4. The significance of this factor for the schizophrenic illness has not yet been clarified. This may be a substance normally present in the serum of all individuals, but quantitatively elevated in the schizophrenic because of excessive production or its failure to be metabolized or detoxified. On the other hand, this may be a qualitatively abnormal substance characteristic of schizophrenia.

5. The possible relationship of this factor to other reported toxic factors in schizophrenia has been discussed.

6. Further biochemical studies are in progress to identify the subject, as well as behavioral studies to ascertain its relationship to the production of disturbances in overt behavior.

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LONGITUDINAL CLINICAL AND NEUROCHEMICAL STUDIES ON SCHIZOPHRENIC AND MANIC-DEPRESSIVE PSYCHOSES¹

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This laboratory is studying structure-function relationships in psychiatric patients with reference to the nervous system itself. Despite the inherent difficulty in doing structural studies on the nervous system *in vivo*, such studies are necessary if primary structure-function relationships in the nervous system in terms of behavior are to be approached. Evidence in recent years has emphasized the relative autonomy of the nervous system with reference to peripheral organs and fluids. This physiological autonomy, frequently referred to in terms of the Blood-Brain Barrier concept, has its basis in the fact that most substances pass in and out of the nervous system relative to the blood with difficulty. There is less likelihood therefore that biochemical correlates of either normal mental function or a disturbance thereof, central nervous system in nature, will be detected as readily in its primary form by studies on peripheral organs and fluids. With this in mind, we have been investigating the structure and function of some little-studied substances, native to the nervous system itself and relating these chemical studies to detailed longitudinal clinical investigations on the same individual psychiatric patients. This report will give only a brief outline and a few examples of the combined clinical and neurochemical approach which is being followed.

STUDIES ON BRAIN GANGLIOSIDE

The carbohydrate-containing macromolecules of the nervous system, both glycolipid and glycoprotein in nature, are being investigated. One of these substances, occurring in high concentration in grey matter of brain, called brain ganglioside, has been

studied in terms of its structure, histological localization, and physiological function. By the isolation of a previously unrecognized constituent of brain ganglioside, gangliocerebroside, the formulation was made of the repeating unit of this substance(1). The chemical structure of brain ganglioside showed it to contain water-soluble constituents (neuraminic acid, hexosamine, and hexoses) on one surface of the molecule, and lipid-soluble constituents (sphingosine, stearic acid) on the other surface of the molecule, suggesting to us that brain ganglioside might be a membrane substance involved in receptor and transport functions in nerve cells(1, 2). By virus studies we have shown that brain ganglioside is indeed a receptor for certain neurotoxic viruses(3, 4). By pharmacological studies with smooth muscle preparations(5) it was possible to show that brain ganglioside has marked stimulatory function in a membrane-active system, the clam heart, suggesting that brain ganglioside may be involved in transmission phenomena in the nervous system. In immunological studies, specific antibodies to brain ganglioside were prepared by us and these were used with fluorescent antibody techniques to demonstrate the nerve cell body localization of brain ganglioside(6). Thus, it has been possible, by utilizing several methodologies, to go from the determination of molecular structure, to physiological function, and then back to the histological localization for a substance native to brain. These studies provide evidence that brain ganglioside and substances chemically akin to it may be involved in important regulatory functions in terms of controlling the entry and egress of a number of important constituents in the nervous system. These functions are referred to collectively as the Barrier-Antibody System(7, 8). If such is indeed the case, the relevance of these functions to mental health and mental disorder requires careful exploration.

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EARLIER STUDIES ON NEURAMINIC ACID IN CEREBROSPINAL FLUID

There is one compartment in the nervous system which is readily accessible to repeated sampling in both man and animals without untoward physiological effects. This compartment is the cerebrospinal fluid (CSF). Our initial studies on "total neuraminic acid" in CSF in 1957, demonstrated an accumulation of this substance in CSF with age, with the maturation being apparent by 7 or 8 years of age(7, 8). Schizophrenic adults showed lower values for this substance relative to controls and comparable only to the values found in some children under 7 years of age. One group(9) working without double-blind controls, did not observe low values as consistently in a small group of schizophrenic patients. A second study(10) was unable to observe differences but used a correction factor for glucose which we have shown to be inadequate(14). On the other hand, our finding of low values for neuraminic acid in CSF in schizophrenic patients has been independently confirmed by two other laboratories(11, 12),³ although one of these confirmatory studies(11) also employed correction factors for glucose which we have shown to be unsatisfactory. The initial findings have also been confined in our extended series of cases now numbering 1,024.

Longitudinal studies(13) on schizophrenic and other psychiatric patients over weeks and months demonstrated that these low values were "group consistent" for all but 8% of untreated individual schizophrenic patients, and that with treatment only some 7% more demonstrated increased concentration of "total neuraminic acid" bringing the values into the normal range. By "double-blind" careful clinical evaluation it was observed that clinical change was frequently temporally coincident with and qualitatively (and occasionally quantitatively) related to the change in the concentration of "total neuraminic acid."

All the above early studies used methods which determined both bound and free neuraminic acid, together with some other substances chemically related to neuraminic

acid(13, 14). By the careful quantitative fractionation procedure subsequently developed in this laboratory(14, 15, 16), it has been possible to define the relative contributions of each of these fractions. In addition, it has been possible to obtain quantitative measures of the amounts of two other substances, the hexosamines and hexoses which are bound in combination with neuraminic acid in the macromolecular glycoproteins of CSF. These new quantitative studies have, in addition to supporting the earlier findings on neuraminic acid in schizophrenics, provided data on the altered neurochemistry in other psychiatric diagnostic groups: in chronic brain syndromes, manic and depressive psychoses, as seen in the concentrations of protein-bound hexosamine and hexose. Furthermore, maturation phenomena have been shown for protein-bound neuraminic acid, hexosamine, and hexose, which are of interest in relation to the possible relevance to psychological maturation(8).

THE GLYCOPROTEINS OF CEREBROSPINAL FLUID

The quantitative fractionation procedure which has been developed for CSF(14) is briefly shown in Figure 1. Whole CSF is lyophilized and dialyzed quantitatively, the whole non-dialyzable fraction (Fraction I) is then partitioned into a water-soluble fraction (Fraction G) and a very small insoluble fraction (Fraction P). Fraction G is further partitioned by column chromatography into 6 glycoprotein fractions. Fraction II, the whole dialyzable material, is then treated on column chromatography with the resultant separation of cations, anions and neutral sugars. Free neuraminic acid from 0 to 12 μ g. per cc. of CSF can be demonstrated in this way. Table 1 illustrates the large amount of quantitative data in terms of total solids, nitrogen, phosphorus, hexose, reducing sugars, hexosamine, and neuraminic acid, previously unavailable, and now available on each of these sub-fractions of CSF. It may be noted that the analyses indicate that Fraction G is a glycoprotein fraction particularly rich in carbohydrate components when compared with comparable glycoproteins of blood. Table 2 shows the electrophoresis and quantitative elution of hexose and neuraminic

³ See also Christoni, G., and Zappoli, R. *Am. J. Psychiat.*, Vol. 117, Page 246, Sept. 1960.

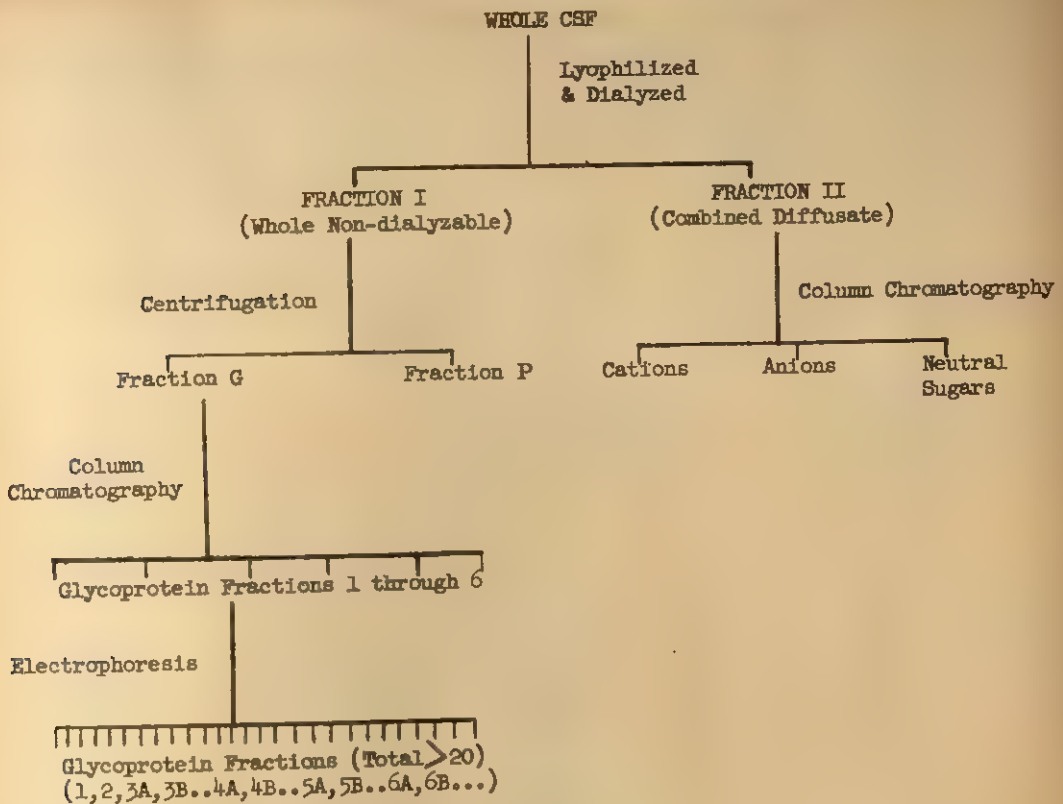


FIGURE 1
FRACTIONATION OF CSF

TABLE 1
ANALYSIS OF FRACTIONS II, I, P, AND G*

Fraction	Total Solids mg./cc. CSF	% N	% P	% Hexose (as glucose)	% Reducing Sugars (as glucose)	% Hexosa- mine (as galactosa- mine)	% Neuraminic Acid
II	10.58 ±1.93 N=16	1.70 ±1.39 N=11	0.18 ±0.14 N=15	5.38 ±2.63 N=11	7.16 ±2.56 N=16	0 N=17	—
I	0.442 ±0.164 N=11	13.4 ±2.6 N=3	0.57 ±0.47 N=7	5.28 ±4.97 N=8	—	3.46 ±3.30 N=8	3.12 ±1.37 N=11
P	0.029 ±0.018 N=90	—	—	14.9 ±10.0 N=90	—	3.17 ±1.56 N=80	2.43 ±1.19 N=90
G	0.355 ±0.145 N=196	14.40 ±2.99 N=64	0.51 ±0.31 N=15	6.65 ±5.07 N=165	—	3.68 ±2.40 N=170	2.20 ±0.78 N=189

* The first value listed for each parameter is the mean, the second the standard deviation of the mean, and the third (N) the number of individual cases analyzed.

acid of Fraction G. It may be seen that normal specimens show the highest concentration of these carbohydrates bound to protein in the α_2 and α_1 globulin regions, whereas schizophrenic patients and some other mental hospital patients show the highest concentration in the β -globulin zone, rather than in the α_2 and α_1 globulin zone. Table 3 shows the further partition of Fraction G by IRC-50 column chroma-

tography(17) into 6 subfractions differing in mobility and in absolute concentration of protein-bound hexose. Each of these subfractions has been further subdivided by paper electrophoresis. By this combination of ion-exchange chromatography and electrophoresis the presence of at least 20 individual glycoproteins has been demonstrated in CSF(17). Furthermore, these fractions differ between individuals. Table

TABLE 2
ELECTROPHORESIS AND QUANTITATIVE ELUTION OF HEXOSES AND NEURAMINIC ACID OF FRACTION G.

% OF TOTAL ELUTED					
	γ^*	β	$\alpha_2 + \alpha_1$	Albumin	"Pre-albumin"
<i>Normal Specimens</i>					
Hexose :	13.0	0	47.4	33.4	6.4
	7.2	1.0	56.5	18.7	16.6
	29.2	8.5	37.0	21.6	37.6
	8.9	17.7	46.7	25.2	33.8
Neuraminic Acid :	30.0	0	48.5	10.5	10.9
	25.6	16.9	26.1	22.4	9.0
	17.4	10.2	42.1	26.0	4.3
<i>Neuropsychiatric disorders**</i>					
Hexose :	19.8	34.8	38.3	0.9	6.2
	11.7	75.0	4.7	6.5	2.1
	2.4	48.5	3.6	45.6	0
	23.7	25.2	8.8	19.7	22.6
	2.0	45.5	20.1	0	32.4
	41.2	45.2	2.4	8.6	4.7

* γ , β , and $\alpha_2 + \alpha_1$ refer to fractions which show the same mobilities as the respective globulin fractions in human blood serum.

**Pooled samples from groups of ten acute and chronic mental hospital patients 80% of whom had the diagnosis of schizophrenia.

TABLE 3
AMBERLITE IRC-50 CHROMATOGRAPHY OF FRACTION G GLYCOPROTEINS

Fraction	Buffer	pH	% of Nitrogen recovered	% Hexose of fraction	Electrophoretic distribution
1	Citrate	4.25	9.3	16.3	
2	Citrate	5.2	9.9	13.1	
3	Citrate	5.72	30.2	10.3	
4	Acetate	6.15	26.4	6.7	$\alpha_2 + \alpha_1$; albumin
5	Citrate-phosphate	7.0	15.3	3.4	$\alpha_2 + \alpha_1$; β ; albumin
6	Citrate-phosphate	8.0	9.1	5.5	$\alpha_2 + \alpha_1$; β ; albumin

4 shows the quantitative amount of protein-bound hexose, hexosamine, and neuraminic acid in individual specimens of CSF. The ratios of these substances in terms of molecular amounts of each vary markedly from individual to individual over the range of

hexose: hexosamine concentration of less than 1:1 through almost 10:1. Most people show ratios of 1:1 or 2:1. The high degree of chemical individuation observed is of great interest since these are chemical constituents of the nervous system itself. The

TABLE 4

MOLAR QUANTITIES AND RATIOS OF HEXOSE, HEXOSAMINE AND NEURAMINIC ACID IN FRACTION G OF INDIVIDUAL SPECIMENS OF CSF

Total Solids in Fraction G mg./cc. CSF	Molar Ratios			Molar Ratio Hexose: Hexosamine
	Hexose (as glucose)	Hexosamine (as galactosamine)	Neuraminic Acid	
0.338	1.4	5.6	1	0.25
0.331	1.8	2.8	1	0.65
0.490	3.5	5.2	1	0.69
0.530	1.3	1.8	1	0.72
0.616	2.9	3.8	1	0.76
0.320	3.8	4.8	1	0.79
0.658	2.7	3.0	1	0.90
0.450	3.2	3.6	1	0.91
0.314	2.2	2.2	1	1.00 (1:1)
0.734	2.7	2.7	1	1.00
0.292	3.7	3.5	1	1.06
0.323	3.4	3.1	1	1.10
0.275	4.7	4.1	1	1.15
0.335	3.8	3.2	1	1.19
0.159	4.6	3.9	1	1.18
0.371	3.6	3.0	1	1.20
0.499	4.2	3.4	1	1.24
0.150	4.5	3.6	1	1.25
0.274	5.0	3.8	1	1.32
0.178	2.9	2.0	1	1.45
0.278	7.4	4.2	1	1.76
0.428	6.9	3.9	1	1.76
0.405	5.4	2.8	1	1.93 (2:1)
0.192	5.0	2.3	1	2.17
0.308	5.7	2.6	1	2.19
0.424	6.2	2.8	1	2.22
0.179	3.2	1.4	1	2.28
0.345	4.3	1.9	1	2.30
0.354	14.4	6.2	1	2.32
0.434	6.1	2.6	1	2.34
0.403	6.6	2.7	1	2.44
0.374	10.3	3.6	1	2.80
0.187	5.0	1.7	1	2.94
0.425	9.9	3.3	1	3.00 (3:1)
0.543	7.7	2.4	1	3.20
0.296	3.3	1.0	1	3.30
0.278	34.4	9.9	1	3.48
0.538	5.3	1.3	1	4.07 (4:1)
0.142	8.7	2.1	1	4.20
0.480	6.1	1.1	1	5.55
0.276	6.7	1.1	1	6.09 (6:1)
0.428	13.6	2.2	1	6.18
0.594	6.7	0.7	1	9.58 (10:1)

possibility that this potential for chemical individuation is related to chemical bases of individuality must now be considered.

GLYCOPROTEINS IN PSYCHIATRIC DISORDERS

Following the observations of 1958, when the absolute amounts of these substances are compared in groups of psychiatric disorder, certain unique patterns emerge. Table 5 shows the absolute concentrations of protein-bound hexose, hexosamine, and neuraminic acid in individual psychiatric patients and general hospital controls. It may be seen that patients with manic psychoses demonstrate very high values for macromolecular hexose. Macromolecular hexosamine is elevated in both chronic brain syndromes and in manic psychoses, but is significantly lower from the control group in untreated schizophrenic patients. Macromolecular neuraminic acid is also low in untreated schizophrenic patients.

With treatment, schizophrenic patients synthesize (or release) glycoproteins with normal or even greater than normal amounts of hexosamine, but containing still significantly lower levels of neuraminic acid (18).

Longitudinal careful clinical follow-ups in double-blind studies with neurochemical studies have now been in progress for as long as 2½ years on approximately 150 patients. Figure 2 shows an example of the relative constancy of these constituents in a single depressed patient in an 11-month period and the marked change which occurred accompanying gross functional change, in this case the change from marked depression to the normal affective or slightly elated state. This change was accompanied by a 500% increase in the absolute amount of protein-bound hexose despite the fact that there was no change in the total amount of glycoprotein present per cc. of CSF. Thus, it is not that more

TABLE 5

CONCENTRATIONS OF MACROMOLECULAR (BOUND) HEXOSE, HEXOSAMINE, AND NEURAMINIC ACID IN CSF OF PSYCHIATRIC AND GENERAL HOSPITAL PATIENTS

Diagnosis	Fraction G								
	Hexose, µg./cc. CSF (as glucose)			Hexosamine, µg./cc. CSF (as galactosamine)			Neuraminic Acid µg./cc. CSF		
	Mean	Range	N	Mean	Range	N	Mean	Range	N
1. Schizophrenia untreated	17.8	(4.0-50.5)	49	8.0***	(1.8-24.2)	57	5.8***	(2.3-9.4)	44
2. Schizophrenia, treated	18.0	(7.0-54.5)	38	14.0	(3.2-44.6)	60	6.7***	(2.7-10.1)	65
3. Other (than 4, 5 and 6)									
4. Chronic Brain Syndromes	26.8	(5.5-81.2)	9	8.5***	(1.6-15.0)	18	7.8***	(3.3-17.2)	26
5. Manic Psychoses	20.5	(11.0-31.0)	22	23.1**	(5.1-60.0)	21	8.0***	(4.4-11.9)	23
6. Depressive Psychoses	72.2***	(51.6-88.0)	4	29.0*	(9.0-57.0)	5	10.6	(10.3-11.1)	3
7. General Hospital	19.2	(14.5-31.0)	18	10.8	(3.9-18.8)	14	11.0*	(5.5-15.1)	13
	22.5	(7.0-55.0)	11	13.5	(8.3-17.8)	16	10.3	(9.0-13.4)	9

α- N=Number of patients.

Symbol Level of Significance of Difference of Means

Next to Relative to "General Hospital" Group

Mean

*** P = < 0.001

** P = 0.001

* P = 0.05

None P = > 0.05

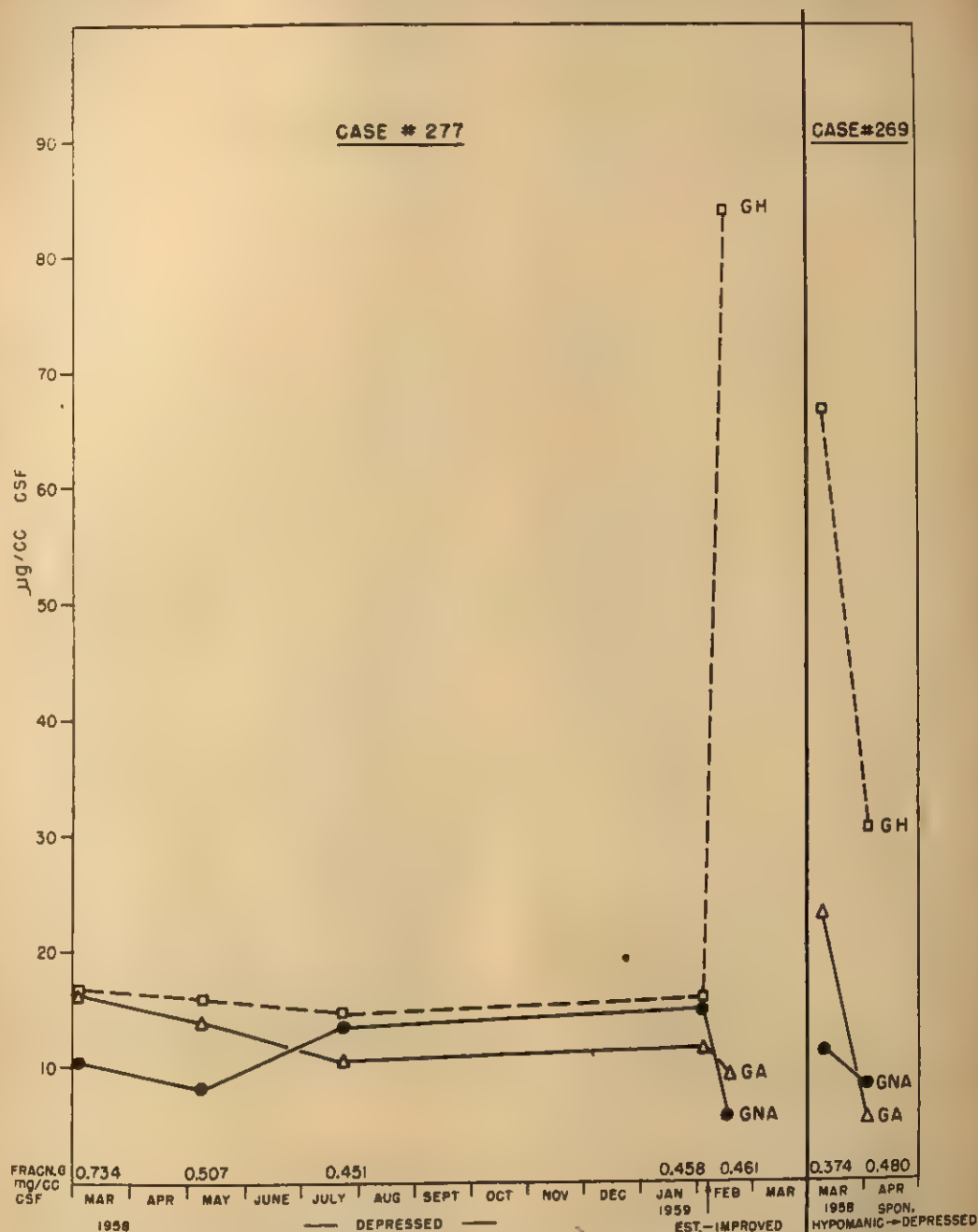


FIGURE 2

THE CHANGE IN ABSOLUTE CONCENTRATION OF MACROMOLECULAR (BOUND) HEXOSE (GH), HEXOSAMINE (GA), AND NEURAMINIC ACID (GNA) OF FRACTION G WITH TIME. CASE 277 IS A PATIENT WITH THE DIAGNOSIS OF PSYCHOTIC DEPRESSION; TREATED WITH ELECTROSHOCK THERAPY AND IMPROVED. CASE NO. 269, PATIENT WITH THE DIAGNOSIS OF HYPOMANIC STATE WHO PASSED SPONTANEOUSLY INTO A SEVERELY DEPRESSED STATE WITHOUT ANY SPECIFIC TREATMENT

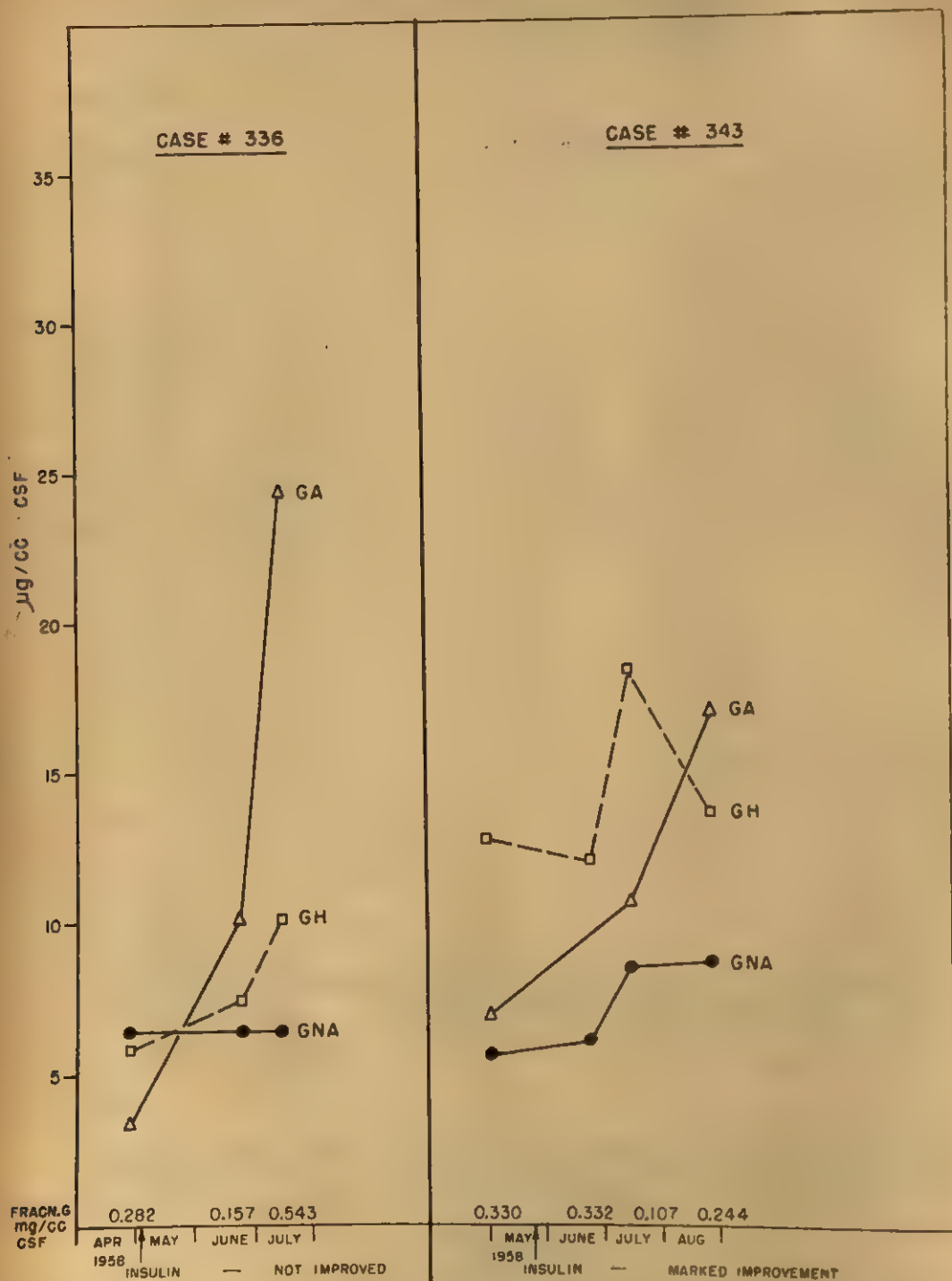


FIGURE 3

THE CHANGE IN ABSOLUTE CONCENTRATION OF MACROMOLECULAR (BOUND) HEXOSE, HEXOSAMINE, AND NEURAMINIC ACID OF FRACTION G WITH TIME IN TWO PATIENTS WITH THE DIAGNOSIS OF PARANOID SCHIZOPHRENIA WHO RECEIVED INSULIN THERAPY. THE SYMBOLS ARE AS IN FIGURE 2.

glycoprotein is present, but that a very different glycoprotein appears accompanying this functional change. The reverse change is seen also: that is, a drop in hexose accompanying the reverse functional change from a hypomanic to a depressed state in another patient who received no specific therapy. The changes in protein-bound hexose and hexosamine appear to relate to mood and other secondary symptomatology and have occurred with drug therapy as well as with electroshock therapy and spontaneously. On the other hand, levels of protein-bound neuraminic acid do not vary with secondary symptomatology but appear to be related to the level of maturity in terms of classical psychological and psychoanalytic periods of development and other more primary personality characteristics. Figure 3 shows two cases with the diagnosis of paranoid schizophrenia treated with insulin therapy. It may be seen that whereas both began with typically low amounts of protein-bound neuraminic acid and hexosamine, the changes in these glycoprotein patterns with treatment were quite different in the two cases. Thus, the first case, representing 85% (Table 5) of schizophrenic patients thus far studied, showed a 700% increase in the amount of hexosamine synthesized in protein-bound form, but no change in neuraminic acid. This patient did not improve. The second case, representing about 15% (Table 5) only of schizophrenic patients studied, showed a somewhat lesser increase in hexosamine, but there was in addition a marked increase in the neuraminic acid bringing it into the normal range. This patient showed a marked clinical improvement.

WORKING HYPOTHESES

These preliminary studies suggest the working hypothesis that there is a disturbance in the synthesis or maintenance of both macromolecular hexosamine and neuraminic acid in schizophrenia and that the disturbance in hexosamine can be overcome (indeed "overcompensated for") with treatment, but that the disturbance in neuraminic acid is most often refractory to therapies presently available. Since hexosamine is a synthetic precursor of neuraminic acid, this accumulation of a precursor, without

the accumulation of its derivative, suggests the possibility of an enzymatic block.

It must be emphasized that these are neither more nor less than working hypotheses and their theoretical nature must clearly be distinguished from the quantitative nature of the experimental data from which the hypotheses arise. Most important, these examples are given in order to demonstrate that these new methods indicate a highly individual extensive chemical geography of native central nervous system constituents and provide a unique opportunity to study primary correlations between neurochemical and clinical events in individual patients over long periods of time.

SUMMARY

Macromolecular glycolipids and glycoproteins of the nervous system itself are being investigated in terms of their chemical structure, histological localization, and physiological function. Parallel "double-blind" clinical and quantitative neurochemical studies in psychiatric patients and controls have indicated a high degree of chemical individuation of these nervous system constituents, which may have relevance to individuality. In addition, distinctive patterns of these constituents have been observed in chronic brain syndrome, manic, depressive, and schizophrenic patients, and controls. These new quantitative methods provide a unique opportunity to study longitudinally primary correlations between neurochemical and clinical events in individual patients.

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DISCUSSION

R. A. CLEGHORN, M.D. (Montreal, P. Q.).—These three papers demonstrate the critical influence of method on the progress of research. The development of new techniques in biochemistry in the past 15 years permits the measurement of organic substances in minute amounts, which was inconceivable prior to that time. This has led to a variety of renewed attacks on problems of mental illness. Frequently the concept underlying these approaches is not new, as has been pointed out with respect to the possibility of a toxic metabolic factor in schizophrenia.

The utilization of such techniques as have been described in these papers makes certain demands of clinical investigators. It is fair to expect that they will be applied with a rigour no less exacting than that exercised in other biological fields, and presented in as comprehensible a form as possible. An audience composed of psychiatrists cannot be expected to be as familiar as yet with the intricacies of

modern biochemistry as applied to its discipline, or with many of the newer terms in common parlance among biochemists. To be frank, I do not feel that certain of the three papers just read gave sufficient thought to the process of lucid communication of material which might well be expected to be somewhat unfamiliar to a large section of today's audience. Doubtless these are difficult data to present simply, but even in reading the manuscripts I found the going heavy at times. Furthermore, viewers cannot be expected to extract significance from columns of data. If any of the authors be even slightly offended by my somewhat sententious and gloomy preamble, I will not be upset if they put this down to the discussant's halting understanding.

My interpretation of a discussant's duty is that he should provide critical appraisal and, where possible, an assessment of implications of the work under consideration.

Dr. Frohman spoke in his introductory paragraph of the use of psychotomimetic drugs in "physiologic amounts." In order to be precise it is appropriate to point out that no dose of these drugs constitutes a physiologic amount. They produce effects in minimal or greater pharmacologic amounts only. A few lines later, these authors refer to Woolley and Shaw as having established: "models suggesting that a central disturbance in synaptic transmitter substances, such as catecholamines, may be present in schizophrenia." Actually, the Woolley-Shaw reference is to serotonin, an indole ethylamine, which is not a catecholamine. These are perhaps simple errors in exposition, but not happy examples of rigour.

In discussing the putative role of abnormal indole compounds from schizophrenic patients, the authors mention McGeer, *et al.*, who reported unusual amines in the urine. Unhappily, they seem to be unaware that a later paper from McGeer's laboratory back tracks on their previous position. They state in 1959 (*Canad. J. Biochem. Physiol.*, **37**, pg. 1493) that: "The differences found between the schizophrenic and normal extracts have not been stressed. Difficulties in quantitation and the uncertain origin of the spots, coupled with the relatively small number of extracts studied, make us feel that significant conclusions can be drawn only after further work." Acheson, working in the same laboratory, was unable to confirm McGeer's original observations on urine. By dealing in such detail with controversial work the Lafayette group have not obtained support for their own endeavours which should, of course, be judged on its own merits. In previous work along the lines of that reported

today, Dr. Gottlieb and his associates have reported that a chronic schizophrenic population has alterations in certain aspects of carbohydrate metabolism. This seemed to be associated with an unknown component in their plasma.

The present study represents an attempt to isolate this factor, using recognized techniques which they describe. It appears from their investigations that there may be a substance, either an alpha globulin or something associated with this protein, which alters the ratio of lactate to pyruvate produced by the chicken's erythrocyte. They say that it appears to be related to previously described metabolic defects in schizophrenia. Unfortunately, as their own review emphasizes, these "defects" are still highly controversial, with various findings denied by apparently equally reliable workers. I would personally be happier if they had demonstrated that the plasma from patients with a variety of recognized infectious and metabolic diseases had been examined for this abnormal protein. There are also criticisms which might be levelled at their interpretation of the fractionation of proteins, *e.g.*, the graphs submitted do not always bear out the direction the authors are pointing to. The five runs in Fig. 1 are five quite different patterns, and it requires a great deal of intuition to find a common point among them. The situation is somewhat better with the Spinco electrophoretic separation (Fig. 3). One might have been better pleased with a larger number of cases.

One great difficulty in assessing the results is the authors' use of ratios of *numbers*; indeed, also ratios of ratios. It is necessary to have some indication of the absolute figures and the normal variation also.

Finally, the *numbers* are the amounts of lactic and pyruvic acids in chicken erythrocytes under specified conditions. According to the authors, the ratio of these indicates "the degree of oxidation within the cell (*i.e.*, the rate of function of hydrogen transport)." The lactic/pyruvic ratio simply does not measure this, and saying it does not make it so. At best, the lactic and pyruvic acid content of the cells incubated with glucose represents a balance between a great many cell constituents which basic research is constantly exploring further.

Research in psychiatry cannot make advances on the basis of rough-and-ready approximated definitions, so that, suggestive though this work may be, one cannot say that it yet means that there is an established metabolic fault in schizophrenia.

I am most unhappy with the authors' in-

ference that the active principle they find in schizophrenic plasma, "may reflect a disturbed mechanism for adapting to stress." As long as that word "stress" is used indiscriminately, the actual mechanisms may not be examined properly.

The experimental findings of Dr. Frohman and his group are undoubtedly interesting but they have lost emphasis in being too closely associated with speculative explanations.

Controversy is a characteristic of science and one depending on a variety of factors such as subtleties of technique, accuracy of performance, and the intrusion of the investigator's emotional investment, usually in an hypothesis. The paper read by Dr. Cole demonstrates one way of dealing with conflicting reports. The introductory paragraph refers to 37 relevant papers, ignoring detail but highlighting points pertinent to the study to be reported. This is entirely legitimate and leaves the audience free to contemplate the results of the studies presented. The examination of the patients and controls by a "blind" procedure inspires confidence. The replication of the original finding supplied support for the initial data which indicated that one of the indoles in the urine was present more often in patients than in controls. Then the biochemists' regard for exactitude spoiled this promising picture. By extracting the urine at the demonstrated optimum pH, many of the previously indole negative controls became positive. Thus the difference between patients and controls disappeared. It must have been disappointing but it was science. In the exercise of another control measure it was shown that an antibiotic with activity on intestinal flora, where indole producing bacteria flourish, caused a decrease in the incidence of indole positive urines in both patients and normal individuals. The conclusion that the source of the indole studied is from the gut is modest but it puts a nail in the coffin of an elusive red herring. In this presentation of negative results one sees the operation of a highly important facet to progress in research.

Exciting though the third paper is, I confess to some blocking at my blood-brain barrier. The concatenation of unfamiliar and complicated chemical terms makes the ego and the id sound like H_2O . However, we must open our intellectual maws and get on with the job of incorporating this novel biochemical bolus.

The findings reported by Dr. Bogoch are based on studies of well over 1,000 cases. This is a reassuring population sample. To summarize his results briefly we see that :

1. The value for total neuraminic acid in the C.S.F. was low in cases of schizophrenia and chronic brain syndrome. This low value increased with improvement in a few cases.

2. The hexosamine content of C.S.F. was also lower in untreated schizophrenics than in controls. It rose with treatment, both in cases which improved clinically and those which did not. Contrary to the low level found in schizophrenics, hexosamine was elevated in both manic psychoses and chronic brain syndromes.

3. Cases of manic psychoses showed high values for C.S.F. macromolecular hexoses. This value decreased with the alleviation of the hypomanic and the onset of a depressed state.

4. The authors relate the level of protein bound neuraminic acid more closely to the level of "maturity" than to what they call secondary symptomatology and mood. In the cases studied, they point out that of the schizophrenic patients improving there was a marked increase in the neuraminic acid, bringing it within normal range. Contrariwise, the changes in protein bound hexose and hexosamine ap-

peared to relate more closely to mood and other secondary symptoms, and might change with treatment despite the absence of improvement.

Under the label "Working Hypotheses," Dr. Bogoch and his associates suggest that an enzymatic block occurs in schizophrenia, preventing the elaboration of neuraminic acid from its precursor hexosamine in certain cases. Hence, while this constituent may accumulate, it does not necessarily follow that its derivative, neuraminic acid, will increase. They urge a clear distinction be maintained between their quantitative data and their theory. This is wise counsel for all workers and might be summarized as maintaining the distinction between content and concept.

In conclusion, I would like to express the hope that, as these biochemical studies get on to firmer ground, a closer association be made with clinical assessment of mental status. In initial stages, this is understandably subordinated, but ultimately much will be gained by keeping the patient in the picture.

PSYCHOLOGIC FACTORS AND PSYCHIATRIC DISEASE IN HYPEREMESIS GRAVIDARUM: A FOLLOW-UP STUDY OF 69 VOMITERS AND 66 CONTROLS¹

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Many reports on hyperemesis gravidarum suggest that it is either caused or greatly influenced by psychologic stress and emotional tension (1-9). At the same time, there are other reports that indicate that hyperemesis gravidarum is unrelated to psychologic and emotional factors (10-13).

The evaluation of psychologic factors is difficult, particularly when adequate control groups are not considered at the same time, as has usually been the case. Further, it is desirable to minimize or eliminate the influence of the vomiting and associated discomfort, themselves, upon the patient's emotional state. These considerations, plus the absence of any published psychiatric follow-up studies, suggested that such a follow-up of a consecutive group of women with hyperemesis gravidarum and controls would be of value. It would permit an assessment of the relationship between this disorder and clinically evident psychiatric illness as well as between hyperemesis gravidarum and various psychologic and social factors when the complicating factor of the hyperemesis gravidarum was in the past. Clearly, the results of such a follow-up study could not finally answer the question whether or not acute emotional tension or stress might have initiated the hyperemesis gravidarum. Nevertheless, it could answer the question whether or not there is an association between the excessive vomiting and clinically evident psychiatric disease, on the one hand, and between the hyperemesis and chronic psychologic difficulties, on the other hand.

The present investigation was designed

to follow and study a group of women with hyperemesis gravidarum and compare them with a group of controls for the prevalence of psychiatric illness and for various psychologic, social, marital and medical factors.

In a previous paper (13), we reported on the prevalence of psychiatric illness among the first 48 vomiters and 45 controls. We found no differences between vomiters and controls in the prevalence of any psychiatric disorder except for hysteria which was encountered in 15% of the vomiters and 2% of the controls. Using a one-tailed test of significance, this difference by the Chi square method was significant at the .05 level. It was concluded, therefore, that in the great majority of cases hyperemesis gravidarum is not a manifestation of clinical psychiatric disease and that in the few cases in which it may be a manifestation of psychiatric illness the only illness involved is hysteria.

Another finding presented in our previous paper was the greater prevalence of hyperemesis gravidarum among ward patients compared to private patients.

Since our original sample included only 14 white vomiters and 14 white controls, in the present study we extended our observations to include additional white vomiters and controls. This report then will deal with the psychiatric and psychologic findings of our entire group of vomiters and controls.

METHOD

Selection of Patients and Controls: The sample consisted of all patients admitted to St. Louis Maternity Hospital with hyperemesis gravidarum during 1954-55 reported previously and all white patients with hyperemesis gravidarum admitted during 1956-57. We selected controls by matching each vomiter with the next patient admitted to the hospital with a normal full-term delivery of the corresponding ward or private status.

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There were initially 81 vomiters and 81 controls. After we began the study, we discovered that one control had suffered from pyelonephritis during the index pregnancy and she was therefore excluded from the study leaving 81 vomiters and 80 controls. Of these, 87 were white and 74 were Negro women; 92 were ward patients and 69 were private patients. Interviews were held with 35 or 83% of the white vomiters, 35 or 78% of the white controls, 34 or 87% of the Negro vomiters, and 31 or 89% of the Negro controls. Reasons for not interviewing patients included: patient not located, 3 cases; obstetrician refused permission, 3 cases; patient moved more than 250 miles away, 17 cases; and patient refused interview, 3 cases. Thus 84% of the original sample were interviewed. There were 20 women who had moved more than 250 miles away of whom we interviewed 3. This left 141 women within the St. Louis area of whom we interviewed 132 or 94%. The ages of vomiters and controls were similar.

A further comment is indicated concerning the appropriateness of our control population. The criteria for selecting our controls were presented above. Since many of the mental, social, sexual and familial factors studied may vary with socioeconomic and sociocultural status, it is important to assure similarity of status of vomiters and controls. We compared our vomiters and controls in terms of their educational level, their husbands' educational level, and their husbands' occupational classification without finding significant differences.

Seven percent of the vomiters and 15% of their husbands were college graduates compared to 10% of the controls and 18% of their husbands. The corresponding figures for high school graduates were 38% of the vomiters, 47% of their husbands, 45% of the controls, and 37% of their husbands. Among the vomiters, 48% of the husbands were skilled workers or higher (categories 0-5 of the United States Department of Commerce) (14), while the corresponding figure for controls was 52%. Even when whites and Negroes were considered separately, no significant differences were found.

Criteria of Diagnosing Hyperemesis Gravidarum: The patients were selected on the basis of their having been discharged with a diagnosis of uncomplicated hyperemesis gravidarum. Patients with coexisting illnesses (e.g., pyelitis, pyelonephritis) and patients with toxemia of pregnancy were excluded from the sample. The literature is vague about the diagnostic criteria for hyperemesis gravidarum and since many obstetricians and obstetric residents were involved in the admission of patients, the diagnostic criteria used were varied. Nevertheless, there is no doubt that these women were severe vomiters. Although many of the hospital charts were incomplete in one or more of the significant items that would have permitted evaluation of the severity of vomiting, 58% of the charts presented evidence of acetonuria on admission and 44% of the charts carried notation of significant dehydration. In 38% of the charts there was noted significant weight loss which was over 4.5 Kg. in 2/3 of the cases. These are minimal figures since many of the charts carried none of these notations either positively or negatively, while others carried one or all of the above items.

Further evidence of the severity of symptoms is available from the interview data. When asked why they first consulted an obstetrician at the time of the index pregnancy, 82% of the vomiters reported that they went because of symptoms (nausea and vomiting) in contrast to only 15% of the controls ($P < .01$). The controls most often consulted their obstetricians because they thought it was the thing to do (49%) or because they wanted to find out if they were pregnant (36%). As further evidence of the differences between patients and controls, 64% of the controls reported either no nausea and vomiting during pregnancy (34%) or nausea only (30%). Obviously, there were no such patients among the vomiters ($P < .01$). More than half the vomiters (54%) had nausea and vomiting over half of the pregnancy while only 12% of the controls vomited for this period of time ($P < .01$). The frequency of vomiting was much greater in the vomiters than in the controls with 99% of the former vomiting more than once a day. Only 14% of the controls vomited more than once a day

($P < .01$). Thus it seems safe to conclude that the patients selected by the divergent diagnostic criteria of many obstetricians did have severe vomiting with their pregnancies.

Follow-up Interview: The patients were interviewed from 2 to 4 years after their hospitalization for hyperemesis gravidarum. The interviews were conducted largely in the patients' homes, and occasionally a third person was present. Three patients were interviewed at the hospital either because they were coming to visit their doctor or because they were hospitalized for other reasons. Three interviews were conducted by long distance telephone. We attempted to reach the other patients who lived over 250 miles away by telephone but were unsuccessful because they either had no phone, or were out of the country with their husbands in military service, or could not be personally contacted.

The interviews were primarily clinical in their orientation and were structured so that the same areas were systematically studied in the same order in each woman. Significant positive and negative answers were explored in detail. Questions were asked relating to medical and psychiatric symptoms, past illnesses, operations, hospitalizations, pregnancies, marriages, attitudes toward nursing, relationships with husbands, sexual behavior, and psychologic adjustment. The answers were scored as yes or no after review by each of the authors and the data coded and placed on IBM cards which were sorted and analyzed.

Diagnostic Criteria: The criteria for diagnosing psychiatric illness were those of Wheeler, *et al.* (15) for anxiety neurosis, Purtell, *et al.* (16) for hysteria, Langfeldt (17) for schizophrenia and Cassidy, *et al.* (18) for manic-depressive disease. It should be noted that these criteria relate only to specific medical and psychiatric symptoms, their intensity and attendant disability. Whenever a patient did not meet these criteria, she was placed in one of the following groups: no psychiatric disease, borderline anxiety neurosis, probable hysteria, or undiagnosed. A patient was considered to have borderline anxiety neurosis if she had a few symptoms characteristic of anxiety neurosis but did not have the car-

dinal symptoms or enough of the others to permit a definite diagnosis. We believe that with further study, some of these patients would be regarded as clinically well and some as having mild anxiety neurosis. A patient was considered to have probable hysteria if she was definitely suffering from a chronic psychiatric disorder that had many of the features of hysteria but with some of the typical criteria absent. Unlike the borderline anxiety neurosis group, this group if followed further would almost certainly continue to show significant psychiatric disturbance and would not be considered clinically well even if a definite diagnosis of hysteria could still not be made. A patient was considered to have no psychiatric disease and to be clinically well if she had no psychiatric symptoms or only occasional, mild, inconstant symptoms that did not seem severe enough to suggest borderline anxiety neurosis. Patients who were placed in the undiagnosed group were felt to have a definite psychiatric illness which could not be diagnosed with certainty.

Statistical Methods: Comparisons were made between vomiters and controls by using the Chi square test with Yates correction for continuity. The probability level of $P < .01$ was selected as the level of significance since so many correlations were done. One would expect 1/20 of the correlations to be significant at the $P < .05$ level of significance; we found 4 correlations significant at the .05 level of significance and since over 100 Chi square tests were done, we felt that $P < .01$ would include only significant results. Since there were no significant differences in our results when the two races were analyzed separately, we combined the white and Negro women and are presenting the data in terms of all vomiters compared to all controls.

RESULTS

CLINICAL DISORDERS AND SYMPTOMS

Diagnostic Groups: In the entire group of 135 women interviewed, 69 (50%) had no psychiatric disease and another 13 (10%) had only borderline anxiety neurosis. Of the remaining 40%, 26 patients had anxiety neurosis (20%) and 10 (7%) had hysteria or probable hysteria. The other 18 patients

(13%) were felt to have definite psychiatric illnesses which could not be specifically diagnosed.

There was no significant difference in the overall prevalence of psychiatric disease between the two groups: 55% of the vomiters and 44% of the controls. There was also no significant difference between vomiters and controls so far as the following individual psychiatric diseases are concerned: anxiety neurosis, 23% of the vomiters and 15% of the controls; borderline anxiety neurosis, 7% of the vomiters and 12% of the controls; manic-depressive disease, no vomiters and 1% of controls; undiagnosed psychiatric illness, 13% of the vomiters and 12% of controls. Although there is a suggested difference in the prevalence of hysteria and probable hysteria, 12% of the vomiters and 3% of the controls, this difference is not significant. There were no significant differences between Negro and white women in the overall prevalence of psychiatric illness or in the prevalence of any specific psychiatric illness.⁸

Gastrointestinal Symptoms: The women were questioned about gastrointestinal symptoms which occurred when they were not pregnant. There was no significant difference between vomiters and controls as to food idiosyncrasies, nausea and vomiting, "upset stomach," "indigestion,"

"stomach pain," "stomach trouble," or constipation.

Menstrual Symptoms: A complete menstrual history was taken from all patients. There were no significant differences between vomiters and controls in the frequency of dysmenorrhea (71 vs. 52%), feeling weak and sick with periods (57 vs. 46%), having to lie down for more than half a day with periods (49 vs. 47%), feeling tense and jumpy with periods (54 vs. 55%), menorrhagia (22 vs. 21%), amenorrhea for 3 months or more when not pregnant (7 vs. 8%), and irregular menses (22 vs. 23%).

Psychologic Symptoms: Vomiters did not differ significantly from controls with respect to being nervous (61 vs. 49%), crying easily (71 vs. 62%), being easily depressed (57 vs. 50%), being shy and sensitive (30 vs. 44%), having their feelings easily hurt (60 vs. 38%), and being easily upset or irritated (51 vs. 36%).

SOCIOECONOMIC STATUS OF VOMITERS⁹

In the original sample from 1954-55, there were 58 vomiters, of which we interviewed 48. Of the original 58, however, 40 were ward patients and 18 were private patients. During these two years, 4,660 ward patients and 4,936 private patients were admitted to the Obstetric Service of St. Louis Maternity Hospital. Thus, despite a nearly 1:1 ratio of ward to private admissions in the overall admissions, the ratio among the vomiters was over 2:1. The hospital does not keep overall statistics of racial distribution but the Chief of the Service estimated that about 85% of the ward patients and about 5-10% of the private patients were Negro (19). Of the 40 ward vomiters 35, or 88%, were Negro which is about the estimated percentage of Negro patients in the overall ward admissions. Of the 18 private vomiters 4, or 22%, were Negro, which is higher than the percentage of Negro private patients estimated above. The small number of patients and the absence of accurate data concerning the racial distribution of all obstetric admissions make it difficult to estimate the significance of these figures, but they certainly do not confirm the viewpoint (8) that hyperemesis gravidarum is more prevalent in upper socioeconomic levels.

In the second portion of our sample, from

⁸ In our previous paper, we called attention to the higher prevalence of psychiatric illness among the Negro controls (51%) compared to the white controls (14%). We had no explanation for this apparent difference but since the difference had markedly diminished with the increased size of our white sample (the prevalence among white controls rose to 37%) it was probably only a chance variation resulting from the small size of the sample in the first study. Further, in our previous paper, we noted that when the white vomiters and controls were compared separately, there was an excess of total psychiatric illness in the vomiters, 56% versus 14% ($P < .05$). When the patients with hysteria were eliminated, the significant difference disappeared but there was still an increased occurrence of psychiatric illness in the white vomiters (44%) as compared to the white controls (14%). With the increased size of our white sample we found that 51% of the vomiters and 37% of the controls were psychiatrically ill, a difference that is not significant; and when the white hysterics are removed, the figures are 45% of the vomiters and 35% of the controls, an even smaller difference.

1956-57, there were 23 vomiters, of which we interviewed 21. The total sample of 23 vomiters was divided into 6 ward patients and 17 private patients. All of these patients were white, by our selection criteria. Using the same estimates of racial distribution as above and the figures for all ward and private admissions for the years 1956-57 (3487 ward admissions and 5386 private admissions), we find that the overall ratio of white ward to white private admissions was 1:10, while the ratio of white ward to white private vomiters was 3.5:10. Again these data, while difficult to evaluate because of the uncertainties referred to above, do not support the idea that hyperemesis gravidarum is more prevalent in upper socioeconomic levels.

PREGNANCY, CONTRACEPTION AND NURSING

Primiparity, Abortion and Stillbirths: The vomiters and controls were compared as to the frequency of primiparity and a history of abortion or stillbirth. The proportion of vomiters who were primiparous at the time of the index pregnancy was 31% while the corresponding figure for the controls was 20%. Up to the time of the index pregnancy, 26% of the vomiters and 24% of the controls had had an abortion or stillbirth. These figures were increased to 32% for vomiters and 27% for controls by the time of the follow-up interview. These differences are not significant.

Vomiting with Other Pregnancies: There was one striking difference between the vomiters and controls so far as their pregnancy histories are concerned: while 53% of the controls had never vomited with any other pregnancy, only 13% of the vomiters gave such a history ($P < .01$).

Contraception: Forty-nine per cent of the vomiters and 35% of the controls used contraceptives; while 15% of the vomiters and 18% of the controls practiced coitus interruptus. These differences are not significant.

Planning of Pregnancy: The data indicate that 36% of the vomiters and 38% of the controls wanted and planned the index pregnancy; 38% of the vomiters and 44% of the controls did not plan but wanted the index pregnancy once it was achieved; and 26% of the vomiters and 18% of the controls

did not want and did not plan the index pregnancy. These differences are not significant.

Twenty-nine per cent of the vomiters and 15% of the controls had had at least one pre-nuptial conception. These nearly always preceded marriage to the father. So far as the index pregnancy is concerned, 12% of the vomiters and 3% of the controls conceived prenuptially. Although these differences are suggestive, they are not significant.

Nursing: The results show that there were no significant differences in intention to nurse the index child (vomiters 47% vs. controls 53%), actual nursing of the index child (33 vs. 44%), belief that nursing is better for baby (62 vs. 67%), belief that nursing is a pleasure for mother (48 vs. 64%) and belief that nursing is good for mother (39 vs. 58%).

MARITAL AND SEXUAL ADJUSTMENT

Divorce and Separation: At the time of the index pregnancy, 19% of the vomiters and 14% of the controls had had a divorce or separation due to marital discord. These were scored independently, i.e., when separation preceded divorce, it was not scored. At the time of the interview these figures were 23% for the vomiters and 15% for the controls.

Trouble with Husband: At the time of the interview, 30% of the vomiters and 23% of the controls reported current troubles or difficulty with their husbands—this was the present husband for the women who had been divorced previously.

Sexual Adjustment: This was assessed in terms of the following: desire for less coitus (20% of vomiters vs. 23% of controls), never initiating love-making (33 vs. 32%), enjoyment of coitus less than husband (29 vs. 30%), complete absence of orgasm (6 vs. 8%), achievement of orgasm less than half the time (28 vs. 32%), coitus primarily to please husband over one-quarter of the time (30 vs. 35%), and dyspareunia (23 vs. 30%). None of these differences is significant.

RELATIONS WITH MOTHER AND MOTHER-IN-LAW

The relations with mother and mother-in-law were evaluated by a series of ques-

tions summarized as follows: mothers reported to have had any negative attitude toward index pregnancy (20% of vomiters vs. 16% of controls), mothers-in-law reported to have had any negative attitude toward index pregnancy (23 vs. 20%), mothers reported as being nagging, dominant or offering unsolicited advice (38 vs. 58%), patients indicating a recognition by herself or husband that there was some dependency present in the relationship with mother (49 vs. 54%). There were no significant differences.

DISCUSSION

Clinical Disorders: The fact that 45% of the vomiters were without psychiatric illness at the time of follow-up study indicates that hyperemesis gravidarum is not exclusively related to chronic psychiatric disease. Nor is it related to the following specific disorders: anxiety neurosis, manic-depressive disease and schizophrenia.

The incidence of hysteria and probable hysteria was higher among vomiters (12%) than controls (3%). This difference is not statistically significant although a trend is suggested. In our first paper (13), we reported that 15% of the vomiters and 2% of the controls had a diagnosis of hysteria or probable hysteria. This difference was significant at the .05 level if a one-tailed test of significance was applied. Increasing the size of the sample did not appreciably change these percentages and a two-tailed test still failed to achieve significance.⁴ This suggested correlation between hyperemesis gravidarum and hysteria involves only 10 of the 135 women in the study. It cannot be evoked therefore as a general explanation for hyperemesis gravidarum. Furthermore, as indicated in our previous report, it is possible that our results merely reflect the greater propensity for women with hysteria to be hospitalized for any reason (16). That hyperemesis gravidarum did not

cause the hysteria is evidenced by the fact that hysteria preceded hyperemesis gravidarum in all 7 cases where this information was available.

The only clinical symptomatology that differed in the vomiters and controls was the much greater prevalence of vomiting with other pregnancies in the vomiters (53%) than in the controls (13%). Furthermore, vomiters tended to have more severe and prolonged vomiting than controls in the other pregnancies. These findings are consistent with the reports of others (20). Other gastrointestinal symptoms, history of menstrual disturbances, and occurrence of psychologic symptoms did not show significant differences between the two groups.

Socioeconomic Status: The conclusions of our previous paper on the socioeconomic status of patients with hyperemesis gravidarum are further supported by this extended study. Our data indicate that hyperemesis gravidarum does not occur more frequently in private patients than in ward patients. These results are in contrast to those reported by others (8), but are consistent with the findings of Kassebohm and Schreiber (10) who reported on a series of patients from a New York hospital serving patients of low socioeconomic status only.

Other Findings: We found no significant differences between vomiters and controls when the two groups were compared with respect to primiparity, abortions and stillbirths, contraception, attitudes toward and planning for pregnancy and nursing, separation and divorce, trouble with husband, sexual adjustment, and relations with mothers and mothers-in-law.

The absence of significant differences between vomiters and controls with respect to psychiatric illness, psychologic symptoms, socioeconomic status, and the other factors of personal and social adjustment noted above is in contrast to many of the recent papers on this subject. Our results, however, are based upon the systematic study of a group of *consecutive* vomiters and a group of *consecutive* controls; both groups selected by objective, *non-psychologic* criteria. We have found no other reports of similar series of consecutive vomiters and controls selected and studied in this way. None of the reports suggesting an associa-

⁴One of the two control patients with hysteria in the second half of the study however, was a woman who had had severe hyperemesis gravidarum in the past, vomiting continuously through the day all through pregnancy with each of 7 pregnancies. She had been hospitalized elsewhere on occasion and was bedridden under a doctor's care during the index pregnancy. If this woman is included with the vomiters, the results become 13% vs. 1.5%. (In this case, $P < .05$.)

tion between hyperemesis gravidarum and psychiatric or psychologic difficulties is based upon such criteria of selection and control.

As mentioned earlier, the results of this investigation can only apply to the question of an association between hyperemesis gravidarum and persistent psychiatric illness and chronic psychologic maladjustment. It cannot apply to the possible association between hyperemesis gravidarum and acute psychiatric illness or psychologic difficulty. The next step, therefore, is to apply these same selection criteria to another group of consecutive vomiters and controls and to study these women at the time of the hyperemesis gravidarum. Such a study is planned.

SUMMARY AND CONCLUSIONS

1. This report is based upon a systematic, clinical study of a group of consecutive women discharged from the hospital with the diagnosis of uncomplicated hyperemesis gravidarum compared to a group of consecutive controls selected by taking the next admission to the hospital of a normal, full-term, uncomplicated pregnancy in the same ward or private status.

2. The study involved a personal clinical interview with each woman 2 to 4 years after discharge from the hospital: 84% of the original sample were found and interviewed; 94% of the women who remained within 250 miles of the hospital were found and interviewed. We thus studied 69 vomiters and 66 controls.

3. The interviews were clinical in their orientation and covered the following areas: medical and psychiatric symptoms, past illnesses, operations, hospitalizations, socioeconomic status, pregnancies, nursing, contraception, marital and sexual adjustment, relations with mothers and mothers-in-law, and personal psychologic adjustment. Each area was systematically covered in the same order in each woman.

4. There were no significant differences between vomiters and controls with respect to overall psychiatric illness nor with respect to any individual psychiatric illness.

5. There were no significant differences between vomiters and controls with respect to other gastrointestinal symptoms, men-

strual disorders or psychologic symptoms.

6. There was no evidence that the prevalence of hyperemesis gravidarum was higher in women from upper socioeconomic levels.

7. There were no significant differences between vomiters and controls with respect to primiparity, abortions and still births, contraception, attitudes toward and planning for pregnancy and nursing, separation and divorce, trouble with husband, sexual adjustment and relations with mothers and mothers-in-law.

8. Vomiters were significantly more likely to vomit with other pregnancies than were controls.

9. There were no significant differences between vomiters and controls to suggest that there is any association between hyperemesis gravidarum and chronic psychiatric or psychologic disorders.

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THE IMPACT OF RECENT RESEARCH DEVELOPMENTS ON PRIVATE PRACTICE¹

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In the last 10 years psychiatry has entered a new phase. The physiological approach to the study and treatment of mind appears to be gaining on the psychological approach in interest and prestige. This impression is gained from contacts with practicing psychiatrists, but until the present study was undertaken,⁴ the extent of the increasing emphasis on physiology in psychiatry was not fully apparent. In our century, psychodynamic psychiatry has spearheaded the expansion of psychiatry as a medical specialty. Indeed, psychiatry has been virtually identified with "dynamic psychiatry" among physicians, behavioral scientists of all kinds and the sophisticated public.

The psychological approach to mental illness has been assumed by other physicians and by the lay public to be based on a theoretical foundation similar to that found in other branches of medicine, and psychiatrists are pictured as doing for mental illness what other physicians do for physical illness. That is, the psychiatrist is thought to apply treatment for the purpose of alleviating symptoms and curing an illness, the cause, symptoms and cure all being of a psychological rather than a physical nature. Thus, a phobic state may be diagnosed from its symptoms, its cause ascertained from the patient's recital of his history, and appropriate treatment instituted. The treatment will be directed toward the development of insight by the patient into the psychological forces producing his symptoms, so that knowledge of specific causes is only obtained over a period of time, and improvement in symp-

toms comes about as this understanding is achieved. More traditional medical measures, such as drugs, may also be used, but these will be purely ancillary or perhaps "shot in the dark" measures when psychotherapeutic measures fail.

Since this is the picture many people, lay and medical, have of the basically psychological nature of theoretical and clinical psychiatry, it appeared to us of great interest to learn just how much effect recent fundamental and widely-publicized developments in the physiological, chemical and pharmacological aspects of psychiatry have had on the thinking and treatment methods of practicing psychiatrists. Recent evidence seems to point to a certain amount of change in practice and in the kind of topics included in the psychiatric literature. A study of the actual therapeutic methods used by psychiatrists in the treatment of various common mental disorders ought to provide information, at least inferentially, about the theoretical convictions of psychiatrists and the way in which these convictions influence actual treatment methods. This paper is the result of such a study, carried out by means of interviews with practicing psychiatrists in the Mid-Peninsula part of the San Francisco Bay Area.

METHODS

Twenty-five psychiatrists, age range from 32 to 55, all practicing in the San Francisco Mid-Peninsula area, were interviewed. These psychiatrists were chosen at random and represent about 50% of the private practicing psychiatrists in the area. The interviews averaged an hour and a half or two hours in length.

The education and professional training of the group are up to the standards of superior American medical schools and psychiatric training programs. All doctors questioned are members of, or are eligible for, membership in the American Board of Psychiatry and Neurology. All except one, who is just beginning private practice, are busy and presumably successful. All but

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two of the psychiatrists included have received some type of didactic psychotherapy as part of their preparation for psychiatric practice. Many of them were analyzed by accredited Freudian psychoanalysts. A high proportion of the group, about 85%, had applied to an American psychoanalytic institute for candidacy and nearly all had been rejected. Three had begun as candidates but had discontinued this association. No full-fledged psychoanalyst was a member of this randomly chosen group, although there are such practicing in the area.

All the psychiatrists interviewed were personally known to the interviewer (M.R.), but the professional and personal relationship was in no case closer than that of fellow-practitioners in the same medical specialty in the same part of the Bay Area. Everyone interviewed was thoroughly cooperative and from all appearances answered the questions freely and fully. Most of those interviewed said that no one had ever before asked them how they practiced their specialty, and they were pleased to talk about it.

Four leading and fairly specific questions, most of them having several parts, were asked. Two of the questions were factual and two were specific but were phrased to elicit opinions. No statistical analysis of data was made, even where this could have been done by the application of small sample theory. For example, no quantitative breakdown was made of the number of psychiatrists using specific drugs for specific syndromes, but it was determined that everyone in the group does use drugs in treating patients suffering from the disorders mentioned by name in the questions.

The questions asked were :

1. Do you use drugs in your practice ? Under what circumstances ? How often ? Specifically : sleeping pills ? tranquilizers ? anti-depressant drugs ? other ?

2. What is your treatment approach to : schizophrenia ? depressions ? anxiety states ? Does your approach depend on your decision as to the cause of the disorder ?

3. Should psychiatric residency training include more physiology, biochemistry, etc. ? Is such training now "top-heavy" with psycho-

dynamics, in view of current trends in physiological research in psychiatry ?

4. Along what lines or in relation to what problems would you like to see future developments in the field of psychiatry ?

Questions 1 and 2 are complementary and are designed to give factual information about actual practices. Question 3 asks for an opinion, and question 4 is also aimed at bringing out an opinion and leading to a general discussion of the main issue of this paper : that is, what is the relation of theoretical convictions to actual treatment methods in the private practice of psychiatry ?

RESULTS

The results obtained in the interviews are summarized in the form of 4 statements which give the main points made virtually unanimously by the psychiatrists questioned.

1. These psychiatrists are primarily psychologically oriented, but they deem physical and pharmacological methods useful, and in fact rely quite heavily upon them in daily practice.

2. Both psychotherapy and drugs are used by all of them, in varying proportions depending on individual taste and judgment, and largely symptomatically. The most common indication for the use of drugs is the severity of the symptoms.

3. As a group, these psychiatrists are aware of, and respectful of, recent developments in physiological and pharmacological aspects of psychiatry, but they are not motivated to exert more than casual effort to learn about the basic concepts and hypotheses involved. They admit a greater interest in the subject than before the advent of the tranquilizing drugs.

4. Their first concern is for the development of knowledge in the behavioral sciences as these are related to psychiatry : psychodynamics, sociology, anthropology, and so forth. Of secondary but serious interest is the continuation of research in the physiology of the nervous system and related organs.

The group is primarily psychologically oriented, as would be expected in view of the great stress in nearly all hospital training programs on understanding the pa-

tient and helping him to understand himself. These psychiatrists use the familiar psychodynamic principles and techniques, varying them according to how they "feel" about a patient, a process that is largely intuitive. With many seriously sick people, especially those wracked with anxiety or depression, the psychiatrists tend to be actively encouraging and to offer specific advice as to the conduct of the patient's life. The technique may vary from moment to moment, depending on clinical exigencies.

These psychiatrists are thus essentially empiricists, showing great adaptability and flexibility in the application of those therapeutic means at their disposal. One psychiatrist expressed it this way :

Psychotherapeutically I treat everyone differently and essentially on a symptomatic basis. I am passive and mild when this approach seems called for and very active and bold when the occasion requires this technique.

Drugs are employed either as a last resort, when the patient is found not to be responding to psychotherapy, or as an "opening gambit" early in therapy, sometimes on the first visit and often in response to a request from the patient. If all goes well, however, that is, the patient is satisfied and the course seems favorable, then psychotherapy remains the method of choice. Some of the reasons given for using drugs under certain circumstances were :

"... to alleviate incapacitating symptoms."

"... whenever I want to make the patient feel better, especially if the patient is depressed or anxious."

"I use drugs symptomatically, especially with depressive and anxiety symptoms."

"... to keep the patient functioning."

"... as an adjunct to psychotherapy, as a preparatory thing. For example in excited states, depressions, or in schizophrenia."

Phenothiazines are widely used in schizophrenia, and last year the amine oxidase inhibitors were cautiously used for depressive states. Electric shock treatment is used rather occasionally, mainly for depressions, and is administered in local hospitals by resident staff members. The psychiatrists in our group gave the impression of becoming more physicians, less psycholo-

gists, as their experience increased. They tended to become more active in their dealings with their patients, and to use drugs more often. Only two out of the entire group said that they would never give a physical examination to a psychiatric patient.

It is evident that these psychiatrists regard psychotherapy in its various forms as the hallmark of the psychiatrist, and they consider it his most effective therapeutic tool. They tend to consider psychotherapy as in some way more fundamental, that is, as dealing with causes, while drug therapy is superficial treatment of symptoms. But in most cases, they seemed ambivalent about this point, and their statements were generally guarded. Typical remarks were :

"If causes can be got at at all, they are psychodynamic."

"You can't often determine the cause, but if you do, it will be psychodynamic."

"Drugs and psychotherapy are not mutually exclusive. But psychotherapy is more fundamental. Causes are mostly psychodynamic."

This emphasis on psychotherapy, combined with a considerable appreciation of the usefulness of drugs, is reflected in the answers to the question about psychiatric residency programs. The general feeling was in favor of more emphasis on traditional medical subjects than has been customary in these training programs, but it was not felt that these programs at present actually place too much emphasis on psychodynamics. Most members of the group were familiar with the chemical vocabulary involved in current psychopharmacological research, though the amount of systematic study of the subject appeared to be meager. It was of interest that all felt that a lecture on physiological or pharmacological topics would today draw almost as large an audience as the more traditional lectures on psychodynamic subjects.

Particularly striking were the answers to question 4, on hoped-for developments in psychiatric research. Here, the unanimous first thought and demand was for more research in the psycho-social aspects of psychiatry, rather than on physiological aspects. Most of the suggestions for research subjects brought out strongly the need to

"know what goes on in the patient" engaged in psychotherapy. What accounts for success in some and not in others? Are some psychotherapeutic methods better than others and if so why?

In order to gain further knowledge about the interpersonal process, of which psychotherapy is one aspect, our psychiatrists appear to favor researches where variables are controlled and results quantified, as in clinical psychology and sociology, rather than the traditional introspective psychological studies. The statements were at times contradictory, the humor of the contradiction being recognized almost as soon as the words were uttered. For example:

First, I believe research should go in the direction of the borderline between sociology and psychiatry—but this would not pay off in the intellectual understanding of psychiatry, I am afraid.

About 25% were in favor of research designed to relate psychodynamic phenomena to physiological events, as in so-called psychosomatic syndromes such as hypertension and peptic ulcer. True to their basic training as physicians, all subjects agreed that physiological research is important, even the very few who claimed that they themselves seldom use drugs. There was a strong tendency, however, to assign most physiological research to people in other disciplines. As one of the group put it, "I am not especially concerned about it because it will take care of itself," that is, non-psychiatric scientists of various kinds will surely pursue the relevant problems.

CONCLUSIONS

On the basis of these interviews with a group of psychiatrists which can be considered, we believe, as representative of such specialists in private practice, it appears that the psychotherapeutic side of practice is mainly empirical and consists largely of suggestion and the transmission to the patient of the psychiatrist's wisdom, gained from wide professional experience with many people. While it is difficult to determine the exact content of psychotherapy from interviews such as these, it does appear that psychodynamic theories,

though widely popular, are in practice difficult to apply as specifically as the psychiatrist would like.

There appears to exist a not inconsiderable amount of doubt and confusion among these psychiatrists about the exact nature of the ills they are called upon to treat and about the clinical usefulness of their theoretical formulations and of the various therapeutic measures available to them. This confusion is evident from statements made in the interviews and by some of the practices described. Thus, nearly all these psychiatrists use drugs with definite success in treating mental illness, especially the more severely incapacitating types, yet they say, at the same time, that these illnesses are basically psychological and psychotherapy is the fundamental treatment. They assume that psychotherapy is the treatment of choice, yet they express a wish to know how effective psychotherapy is and how it can be evaluated. They would like to know more about "what goes on in the patient" during psychotherapy, but no one expressed a wish to know how the drugs work which are helpful in relieving many psychiatric symptoms, often dramatically and for long periods of time. There was no feeling that these newer drugs are a mere "flash in the pan," but there was no indication that the efficacy of the drugs suggested to the psychiatrists any implications about the nature of the psychiatric disorders under discussion.

This investigation, then, informal and limited in scope as it was, shows fairly clearly that the relation between a psychiatrist's theory and his actual use of various therapeutic methods is not so simple and scientifically justifiable as one could wish. These psychiatrists find that clinical necessity often leads them to use methods which their theory says should be unnecessary and indeed should not be successful. They find, furthermore, that the therapeutic method their theory says is fundamental and should be most effective cannot usually be applied with any specificity and often may be a failure. They find that they do not for the most part know just how or why they help their patients, and yet help them they do.

It has been said that psychiatry has entered the "take-off" phase of development, during the past 10 years, and we can hope that the extraordinary rate of progress of the "take-off" will continue. It is encouraging to learn that this progress is seen not only in research reports but in the everyday work of the practicing psychiatrist. Whatever the lag between theory and practice, and whatever confusion this lag may engender in the minds of those who must deal with the sick patient, the psychiatrist has shown himself in this study to be in the best tradition of the medical practitioner who, to quote Dr. Alfred Stillé, must never forget that "it is still no small portion of his art to rid his patient's path of thorns if he cannot make it blossom with roses."

DISCUSSION

J. M. COTTON, M.D. (New York, N. Y.).—Speaking directly in terms of the title of Dr. Rose's paper, I think one can summarize this study by saying that the impact of recent developments in neurophysiological research upon private practice has been very small.

In Dr. Rose's sample the standard pattern would appear to be one in which the therapy is primarily psychotherapy of an opportunistic variety styled to fit the individual needs of the patient as intuitively perceived by the therapist. There is no reason to doubt that this is a typical sample.

Dr. Rose notes, with some regrets, the absence of a truly scientific approach in psychiatric practice. I wonder if this concern is justified:—I recall a distinguished and successful physician in a large Southern city who was reputed to have given every patient who came to him the same prescription regardless of the symptoms or findings on examination. This prescription was a combination of a small amount of bichloride of Mercury and sodium iodine and was thought at that time to be useful in tertiary syphilis. Now the incidence of syphilis in this community was quite high at the time but I never felt that Dr. Blank's

success and status in that community was principally due to the "scientific" effectiveness of the pharmacological action of mercury and iodides. I always thought his peculiar usefulness was due to an intuitive understanding of the anxieties and insecurities of his patients and a remarkable ability to reassure and comfort them with the image he created of a sheltering, omnipotent protector. This may not have been scientific but it was excellent medicine for many, many people.

I am sure you know that most of the tons of vitamins, antibiotics, hormones, sedatives or stimulants are not prescribed upon the established scientific basis of need, but rather as part of a program of reassurance and support in much the same way the Witch Doctor rattles bones in a gourd. One uses the tools one has at hand and that are currently in vogue. If one attempted to care for the sick today upon a strict basis of proven scientific fact, it would not be possible to do anything for 95% of those who seek help in a doctor's office.

Modern neurophysiological research is making some fascinating discoveries. It is stimulating and satisfying to read of discoveries that emotion and behavior can have humoral and neurological correlates. It is very important that this research continue and perhaps eventually the clinician will have tools which can reliably affect some of the symptoms that trouble the patient and thus become part of a program to help him find the effectiveness and confidence he has lost.

I don't believe the practicing clinician can really believe that final answers to problems of man will be found in the test tube, but rather in the careful and scientific study of man himself. It is perfectly reasonable that we should place greater hope on the sciences of man, sociology, anthropology and the new science of communication. These new sciences which are concerned with the highest level of man's integration, the level of interpersonal relations, may be able to give us new tools and techniques that will make many more "good physicians."

IMPLICATIONS OF A LONGITUDINAL STUDY OF CHILD DEVELOPMENT FOR CHILD PSYCHIATRY¹

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In child psychiatry, as in psychiatry as a whole, our primary sources of data have been retrospective. The understanding of the developmental process has been derived from the recall by patients or their families of previous patterns of behavior and experience. The analysis of currently observed behavior and subjective state has been dependent upon such retrospectively obtained material.

The adequacy of the retrospective method may be questioned on two grounds:

1. Even if the information obtained is accurate as history, it provides only a partial and often illusory basis for reconstructing the sequences of forces involved in the evolution of individuality. Although a considerable amount of information has been accumulated with respect to factors underlying the general aspects of age-related responses, little is known about the specific influences that contribute individuality to these response patterns. In short, our understanding of what makes *people* exceeds by far our ability to delineate the forces that make a person.

An illusory confidence in our knowledge of the forces contributing to individual development often accompanies involvement in the psychotherapeutic and psychoanalytic process. Starting with the person as a developmental product, through retrospective analysis we seem to be able to define the logic and dynamics of his individual development, to suggest plausible reasons for his movement along one path rather than another at developmental choice points, and even to feel that this knowledge rather fully accounts for his individuality.

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But, as many serious thinkers have pointed out, this type of retrospectively derived understanding is at best only partial. Thus Freud(12) has stated:

So long as we trace the development (of a mental process) backwards, the connection appears continuous, and we feel we have gained an insight which is completely satisfactory or even exhaustive. But if we proceed the reverse way, if we start from the premises inferred from the analysis and try to follow these up to the final result, then we no longer get the impression of an inevitable sequence of events, which could not have been otherwise determined. We notice at once that there might be another result, and that we might have been just as well able to understand and explain the latter. . . .

2. It is also not possible to accept retrospective data as accurate recall of events and processes. While such accuracy may perhaps be unnecessary for the purposes of psychotherapy,⁵ it is of primary importance for the understanding of the sequential patterns of the psychological evolution of an individual. The inaccuracies of recall by patients in psychiatric treatment has been repeatedly observed. In our own study parents have been asked, after a two year interval, to recall important details of their child's functioning in the first year of life(21). These reports have then been compared with data as to these same functions obtained from the same parents at the time of their occurrence. Significant distortions of accuracy have been found as a frequent phenomenon. The distortions have a cultural as well as an individual basis. Thus 15% of the mothers who had never used a pacifier stated they had, and only 6% who had used it failed to recall this. Twenty-eight per cent whose children had sucked their thumbs stated that this had

⁵ Thus Freud, after he discovered that patient reports of various childhood experiences were grossly inaccurate, could still use these distortions effectively for psychoanalytic clinical purposes.

not happened and no parent in 100 recalled thumb-sucking when it had not previously been reported. This opposite direction of distortion corresponds, moreover, to the attitude of the most widely-accepted authority on child-care for this group, who approves of the use of a pacifier, but frowns on thumb-sucking (22). The pattern of distortion in recall is one which causes uniqueness in individual functioning to disappear and to produce information which approximates the socially acquired concept of optimal functioning. These results are in accord with the findings of Gildea (14).

Therefore, on theoretical grounds and for the practical reasons of personal distortion and of social levelling, retrospective data are insufficiently powerful for the delineation of the processes involved in the development of individuality. These factors underlie the marked increase of interest in longitudinal, anterospectively oriented studies of child development in recent years (6, 17, 24). It is evident that only such anterospective and longitudinal investigations can provide the data from which a more definitive theory of individual psychological development may be derived.

However, agreement as to the necessity and desirability of longitudinal study does not automatically lead to the formulation and conduct of a productive investigation. Many such studies have been attempted, but the general result, as described by a recent exhaustive survey of the literature by Stone and Onque, has been the accumulation of "incredible amounts of data which defy any degree of organized analysis and have no relation to a specific, experimentally posed hypothesis. Much of this research, therefore, never reaches the manuscript stage; and if it does, it is formulated as impressions of the author or as case histories" (25). An adequate longitudinal study, in addition to posing a specified and testable hypothesis, must deal with various problems and difficulties; namely: 1. Are the samples of behavior studied characteristic of the individual child? 2. Are the primary data, upon which all subsequent analysis and correlations are based, objective and descriptive, or admixed with interpretations based on some *a priori* theoretical scheme? 3. Are the findings accurate and replicable

by other workers? 4. Are the variables observed and studied pertinent to the problem under consideration? 5. Are the methods of gathering and analyzing data economical, so that a large number of children can be followed? and 6. Are any artificial elements introduced into the data collecting and the observational setting which will produce significant distortion of the characteristics of the child's behavior?

In recent years, a number of studies have been strongly influenced by the formulations of psychoanalytic theory, which offer a systematic and comprehensive theoretical framework for the understanding of the genesis and dynamics of personality development. Unfortunately, these studies have tended to introduce two additional difficulties beyond those enumerated above. First, there has been a tendency to assume that the body of psychoanalytic concepts has already been validated and proven, thus justifying the immediate translation of observed behavioral phenomena into interpretations regarding instinctual tension states (11), strength of oral drive (18), resolution of the Oedipus complex (7), etc. Secondly as Escalona (8), has also pointed out, various theoretic hypotheses based on psychoanalytic concepts have been used as the basis for developmental studies, when such concepts were not definable and testable in experimental terms.

With these issues in mind, our longitudinal study started from the position that at present no adequate theoretical framework exists which would serve as the basis for a deductive approach to individual child development. Consequently, it was our belief that a useful hypothetical framework could be constructed only on the basis of the inductive analysis of data concerning the details of behavioral functioning in infancy and childhood, particularly as they are manifested in the activities of daily living. Collected longitudinally, such data also provide information on the evolution in time of adaptive response patterns. To accomplish this objective, it was necessary to obtain a stable population of infants and to develop an economical method for the continual collection of valid and representative data.

Using a structured interview which fo-

cuses on gathering information on a descriptive, factual level, we have found that it is possible to utilize the parents as a rich source of meaningful, accurate ongoing data on the child's behavior. The parental reports have correlated closely with descriptions of behavior obtained by independent, direct observations. They have also been broad and detailed enough to permit content analysis (26).

The use of the parent as a source of longitudinal behavior data presents several advantages. It permits the gathering of detailed information not only as to the child's single reaction to a particular stimulus such as the bath, a new food or an illness, but also as to the sequence of development of his responses to these same stimuli on repeated exposure. Such data could otherwise only be obtained by an observer actually living in the home. Information from the parent can also be obtained at low investigative cost and thus permits the longitudinal analysis of large samples of children.

Starting with the use of detailed parental interviews as a first source of behavioral information, 110 children have been and are continuing to be followed in a longitudinal study of child development started in March, 1956. The structured interviews with the parents, at 3 month intervals for the first year and 6 month intervals thereafter, in which detailed information is gathered as to the behavior of the child in the various functional activities of daily life, as well as the sequences of reactions to any special situations that arise, have been supplemented by: 1. Periods of direct observation at one or more points during infancy in most of the children, 2. Detailed observation of each child's behavior during a standard play and psychological test situation at three years of life, 3. Direct observation of the child's behavior in nursery school and interviews with the teacher as to the details of the child's functioning at school, and, 4. Structured interview with each mother and father designed to elicit information on parental attitudes and child-care practices.

The prime goal of the study has been to study the phenomenon of individuality in the characteristics of reactivity in the young infant, the consistency, stability and per-

sistence of these characteristics as the child grows older, and their significance for psychological development. Various aspects of the methodology developed for the study and a number of the findings thus far obtained have been reported previously (5, 26).

PRIMARY REACTION TYPES

Early in the study, the content analysis of the parental interviews and of independently obtained direct observational protocols permitted the delineation of individuality in children with respect to 9 features of initial reactivity. In order to permit the continuous study of the significance of these initial characteristics, it was decided to minimize the effect of additional variables such as external environmental influences by making the sample as socially homogeneous as possible. The families in our series, therefore, represent a relatively homogeneous middle-class urban and suburban group with the majority involved in various professional occupations. The child-care practices are generally permissive, with an emphasis directed toward satisfying the needs of the child. In many of the families, fathers participate actively in the care of the child.

The characteristics of reactivity defined initially have been found to be reliably present in the entire study population and can be scored quantitatively on a 3-point scale in each child in each protocol as early as the third month of life. The method of scoring, the evidence for its reliability, and the description of categories have been detailed in previous reports. The 9 categories are:

1. Activity-Passivity refers to the magnitude of the motor component present in a given child's function and to his diurnal proportion of active and inactive periods. Therefore, protocol data on motility during bathing, eating, playing, dressing and handling as well as information concerning the sleep-wake cycle, reaching, crawling, walking, eating and play patterns are used in scoring for this functional category.

2. Regular-Irregular refers to the predictability and rhythmicity or unpredictability and arrhythmicity of functions and can be analyzed in relation to sleep-wake cycle, hunger,

elimination, appetite and demand cycles.

3. Intense-Mild refers to the quality of response and its vigor, independent of its direction. A negative response may be either mild or intense as can a positive response. Responses to stimuli, to pre-elimination tension, to hunger, to repletion, to new foods, to attempts at control, to restraint, to dressing and diapering all provide scorable items for this category.

4. Approach-Withdrawal represents a category of responses to new things, be they people, foods or toys. In it the behaviors reported are scored for the nature of initial responses.

5. Adaptive-Nonadaptive again refers to responses to new or altered situations. However, in this category one is not concerned with the nature of the initial responses, but with the ease with which responses are modified in desired directions.

6. High Threshold-Low Threshold is an omnibus category in which sub-categories are concerned with (a) sensory threshold, (b) responses to environmental objects, and (c) social responsiveness.

7. Positive Mood-Negative Mood represents a category in which overall expression of pleasure-pain, joy-crying, friendliness-unfriendliness are rated.

8. Selectivity-Nonselectivity refers to initial discriminativeness, to clear definition of functions and to the difficulty with which an established direction of functioning can be altered. It is a composite of persistence and attention span.

9. Distractibility-Nondistractibility refers to the ease with which new peripheral stimuli can divert the child from an ongoing activity.

In 95 of the children the parental interview data have already been scored through the first two years of life. In the 45 oldest of these children scoring has proceeded through the third year and into the fourth. In all cases the original definition of the child's reactions on the scale for each category shows consistency and stability at better than the .01 level of confidence. Various clusters of the 9 categories are also discernible. The most frequent one defines a child who exhibits medium or high activity, regularity, adaptiveness, approaching, mild intensity, low threshold, positive mood, distractibility and persistence. Eighteen per cent of the children fall into this cluster, and 26% more show it except for a deviation in only one of any of the 9 categories. At

the other extreme are those children, comprising 7% of the total, who show the characteristics of irregularity, withdrawal, non-adaptability, intense responses, negative mood and non-distractibility. Other types of clustering are also evident, and involve varying numbers of the children.

Each child also appears to have a characteristic mode of response to new situations, which shows consistency even in the increasingly complex situations that appear as the child grows older. The mode of response appears to be compounded from elements involving a number of the basic 9 categories of reactivity. However, we have not yet fully explored the relation of such modes to primary reactivity.

We have labeled our 9 categories of reactivity as primary because they are evident early in extra-uterine life. We have called them reaction patterns and not behavioral patterns, because the individuality and consistency of each child is expressed in a specific reactivity to stimuli, and not in any fixed content of behavior. The behavior content keeps changing as the child grows and matures, but the formal pattern of reactivity tends to remain constant. The etiological question, as to whether the primary characteristics are produced by hereditary, prenatal or neonatal and early postnatal forces, or some combination of these, cannot be determined from our present data, and will require special studies for its elucidation.

The determination of the existence of the primary reaction pattern in the infant bears significantly on one of the basic unresolved problems in child psychology, that of individuality. There has been, on the one hand, increasing recognition of the existence of individual differences in functioning of the young infant, and, on the other hand, an awareness of how little factual data there are regarding this phenomenon (9, 13, 20, 28). Various studies have reported observations on individuality in patterning in specific discrete areas, such as motility (13), perception (2), sleeping and feeding (10), emotional tone (17), autonomic functioning (3), biochemical characteristics (30) and electroencephalographic patterns (29). Our study has attempted a systematic, more behaviorally oriented approach to the ques-

tion of what characterizes individuality in the young child, with results which appear promising for future investigation.

One question arises directly as soon as it is clear that individuality in reaction characteristics is a reliable and persistent feature of child development. What is the relevance, if any, of the primary reactivity characteristics to more complex features of adaptive psychological functioning? In contrast to many previous formulations of constitutional typology, we do not believe that there is any one-to-one correlation between the primary reaction pattern and the specific character of the personality structure that develops in each child. Similarly, there is also no one-to-one correlation between parental practices and attitudes or other specific environmental influences and the course of the child's psychological development (4, 16, 19, 23). Personality structure appears to emerge out of the interplay and interaction of the various forces involved in psychological development. As will be indicated below, our data regarding adaptive functions in the 3-4 year old age group indicate that psychological organization may be the resultant of a highly complex set of interactions in which primary reactivity functions as a significant variable.

In the field of child-care practices, the same lack of any one-to-one correlation between specific practice and resultant effect is also evident (5). Different children appear to respond differently to the same approach of the parent as regards sleeping, feeding, toilet-training or general discipline. A similar practice, such as demand feeding, may result in an irregular schedule in one child and such a regular one in another as to appear at first glance to be the consequence of a rigid clock-scheduled approach.

As previously reported, our data indicate that individuality in the response of different children to parental child-care practices is related to characteristics of the primary reaction pattern as well as to the manner in which the parents apply these practices (5). The primary categories of adaptability, approach-withdrawal, intensity, distractibility and persistence appear especially relevant. The child's general activity level may also influence the response to overall training and discipline. The extremes appear to be

represented by the hyperactive child who is very difficult to restrain and to teach various prohibitions and the quiet, slowly moving child who requires high level stimulation before he approaches the average levels of activation.

In the course of a consultation practice in child psychiatry, one of us (S. C.) has found the concept of primary reaction patterns to be extremely useful in a number of ways. It has helped to avoid the error of assuming that all behavioral phenomena necessarily have a primarily psychodynamic basis. For example, although frequent intense negative responses in a youngster may be an indication of underlying hostility and anxiety, it may also occur as an expression of characteristics of primary reactivity. In advising parents as to the optimal approach to a child, it has frequently been important to distinguish between those undesirable characteristics which are largely psychodynamic in origin and therefore capable of basic change, and those attributes, such as irregularity and withdrawal responses, which are aspects of the primary reaction pattern and are not readily subject to change. In the latter case, although the pattern may not be changed, the parents can be guided to understand the child so that they may function in such ways that the undesirable behavior is minimized by channeling activities as much as possible in constructive directions. For example, there is the child who tends to retreat initially from new experiences with an intense expression of negative mood. If the parents can become aware that this behavior is not a result of motivated negativism, underlying insecurity, or psychodynamically initiated hostility, they themselves can better maintain objectivity and consistency in their handling of the reaction. If they anticipate that the child will have a minor tantrum in each new situation which may be embarrassing for them, but will wear itself out and then may be replaced by tentative positive overtures, they can learn to wait out each such event without complicating it by their own subjective reaction. If, on the other hand, they react with anger, by attempting to coax the child into premature contact or try to persuade him to express a positive mood, they may precipitate a de-

• fensive negativism and hostility and cause the child to be anticipatorily more insecure when approaching new experiences. With patient parental approach such a child can learn eventually that, although he may be initially disturbed by new experiences, if he gives himself time the first response will pass. He will then be able to explore the situation with ease and even with pleasure.

• Even in clear-cut neurotic behavior disorders, it is not infrequently apparent that the disturbed functioning represents an accentuation and distortion of characteristics of primary reactivity to the point of caricature. For example, there are many cases in which the parents respond with growing annoyance and pressure to the manifestation of initial negative mood and withdrawal in the type of child described above. The child's response of negativism and increased negative mood to these parental attitudes can produce a vicious cycle which can finally lead to defensive hostility with constant projections of derogation and aggression. Thus we may obtain as an end product an individual with motivated aggressive and hostile behavior who shows a highly suspicious reaction to anything new, be it a person, place or activity. He makes contact by attacking and assumes that every personal contact must involve an overt or hidden antagonism on the other person's part. In such a case the goal of treatment is to correct this caricature, not to transform the basic pattern. Finally, the knowledge that certain characteristics of their child's behavior are not primarily due to parental malfunctioning has proven helpful to many parents in assuaging feelings of guilt resulting from their assumption of responsibility for all undesirable aspects of their child's behavior.

ADAPTIVE PATTERNS IN THE PRESCHOOL CHILD

In studying the 3 to 5 year age range we have continued to be guided by the principle of recording objective, descriptive items of behavior and avoiding all inferences as to the inner, subjective state of the child at the level of data gathering. Increasingly complex patterns of psychological organization and of interaction with the environment at this age, as well as the development and use of language, make for both

expanded opportunities and increased difficulty in the study of individual characteristics of behavioral functioning. However, our methods are continuing to provide rich sources of behavioral data which are amenable to content analysis. The original 9 categories of reactivity remain scorable and continue to show consistency and stability. New categories of more complex adaptive patterns are being delineated from the behavioral data. These new categories include mechanisms of problem-solving, reactions to success and failure, patterns of social relatedness, type of approach to a new situation, degree and character of independence, degree of influence of immediate environmental stimulus on ongoing activity, and patterns of language utilization. These phenomena also serve to characterize individuality in functioning. These functions, which we have tentatively labeled adaptive patterns, resemble some of the categories which have been called ego functions(15). Our overall methodological approach appears to offer a basis for a reliable, replicable and systematic study of these functions, just as it has proven satisfactory for the study of the simpler behavioral activities of the infant.

Although the analysis of the data is still at a preliminary stage, it appears clear that parental attitudes and practices as well as other environmental factors are very much involved together with the primary reaction pattern in determining the characteristics of the child's adaptive functions. It has also begun to become apparent that any adaptive pattern must itself be analyzed not only with respect to its content and organization, but also as to its temperamental component. There is the suggestion in the data that additional primary patterns may emerge in the pre-school period and play a part in influencing the individuality of adaptation.

WEANING, TOILET-TRAINING AND OTHER EVENTS

The anterospective approach and longitudinal character of the behavioral data in this study have made it possible to analyze the child's reaction to features of important environmental change or influence, such as weaning, toilet-training, the birth of a

younger sibling, and the return of the mother to full-time outside work. These circumstances provide experiments in nature for the exploration of individual adaptive reactions. Viewed from another perspective, these data also provide the opportunity to test the correctness of these formulations which assume that such events are necessarily traumatic because they involve the frustration of one or another hypothetical instinctual drive.

In exploring this auxiliary question, we have made a detailed analysis of the reactions to weaning and toilet training in 50 of the children. Disturbances in behavior coincident or immediately subsequent to these events were considered as relevant even if they involved other aspects of functioning, such as sleeping, motor activity, or social interaction. About 40% of the children were breast-fed and reactions to weaning from either or both breast and bottle were considered. Only one disturbance in response to weaning and only one, in the same child, in response to toilet-training have been found in any of the children. Of special interest is the fact that a number of the children initiated weaning or toilet-training themselves, by refusing to take the bottle and by demanding to be toiletied. In these cases the mothers sometimes resisted the child's desire because of all they had heard and read as to the dangers of early weaning and toilet-training. Instead of the more usually reported syndrome of the mother pressuring the resistant child to be weaned and toilet-trained, we have the very opposite.

In 20 of the children we have had the opportunity to follow the sequences of reaction to the birth and entry into the family group of a younger sibling. The responses of different children have shown the widest possible spectrum of individuality. Reactions have ranged from severe, prolonged disturbance, to mild transient disturbance, to neutral responses, and even to positive socially stimulated reactions.

Six mothers have returned to full-time outside work within a few months after the birth of the child. In 5 cases, the children, who are now 3 to 4 years old, have shown no evidence of disturbance. In the sixth there have been behavioral difficulties

which appear to be associated with special circumstances involved in this situation.

These findings indicate that any categorical formulations as to the psychic dangers inherent in the processes of weaning, toilet-training, the birth of a sibling or the return of the mother to work, are not valid.

SUMMARY AND CONCLUSION

The present paper has described the considerations that led to the formulation of a longitudinal study of child development. It has indicated that such study is necessary for : 1. The determination of the variables which contribute to personality formation, 2. The understanding of individuality in psychological functioning, 3. The relationship of behavioral disturbance to psychodynamic and non-psychodynamic etiologies, and 4. The importance of longitudinal study of a child for parental guidance.

The data presented have demonstrated the existence of stable, primary patterns of reactivity in children. These data were derived from parental interview and a variety of independent direct observational and interview sources. The primary patterns defined have been considered with respect to their early appearance in infancy, their persistence in childhood, and their pertinence for the emergence of adaptive patterns in children. It has been concluded that initial primary reactivity is a crucial variable together with environmental influences in shaping both personality structure and temperament.

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THE JUVENILE LEGISLATION IN INDIA ¹

NAUTTAM J. KOTHARI, M.D., D.P.M.²

EXTENT OF PROBLEM

During the period of 1948 to 1954 the number of arrests reported from all 14 states was 86,491. An overwhelming 94.9% went to 10 states and 5.1% to the remaining 4 states. The number of arrests in the States of Andhra, Bombay, Madras and West Bengal comprised 83.3% of that in the whole country. These 4 states are highly industrialized with a marked mobility of the population from rural to urban areas. In Bombay and West Bengal States there is the additional problem of influx of population displaced from Pakistan after the partition.

The Juvenile Legislation. This legislation began in 1850 with federal enactment of the Apprentices Act (Act IXI) to deal with juveniles between the ages of 10 and 18. Under one of the provisions of this Act, a trying magistrate had the authority to bind over boys and girls as apprentices, if convicted of petty offenses or found destitute. The Reformatory School Act of 1876 replaced the Apprentices Act of 1850. The Reformatory School Act of 1897 was an amendment to that of 1876. It provided for establishment of a reformatory institution for delinquent boys under the age of 16. A boy of 14 years of age could get released on license, if there was an arrangement for a suitable employment. This Act did not make provision for juvenile offenders among girls. They were dealt with under the provisions of earlier legislative enactments.

The State of Madras made legislative progress in this field by passing the Madras Children Act (Act IV) in 1920. The State of Bengal followed by passing of the Bengal Act II in 1922. Bombay's Children Act came into effect in 1924. All these legislations have been amended to fulfill the new and growing requirements.

The Madras Act and the Bengal Children Act defined "child" as a person under 14 years of age, a "young person" as one between 14 and 16 years, and a "youthful offender," a person under 16 years of age convicted of an offense punishable with imprisonment. These two states established a Junior Certified School for training of children and Senior Certified Schools for training of youthful offenders.

The Bombay Children Act provides that 1. Only juvenile courts shall deal with the juvenile offenders, 2. There shall be no joint trial of juveniles and adults having jointly committed the same crimes, 3. Juvenile court has the authority to commit a pre-delinquent juvenile to an institution, and 4. To detain him for observation, 5. The exploitation of child employees is punishable, 6. The probation officers are public servants having special privileges and protection in discharge of their duties, 7. The age limit for girls is raised from 16 to 18 years to protect them from danger of seduction or being induced to prostitution.

All but 4 states have enacted suitable juvenile legislation. Under the juvenile laws the age limit for treatment eligibility is 18 years. The Saurashtra Children Act of 1954 has set the age limit up to 18 for the appearance before a juvenile court and up to 21 years for treatment eligibility.

THE JUVENILE COURT SYSTEM

In 1915 a children's court was set up in Calcutta to try offenders under the age of 15. With the passing of special laws, Juvenile Courts were established in Bombay, Calcutta, Hyderabad and Madras.

The states which have special courts or children's courts constituted under special laws are Andhra, Bombay, Jammu and Kashmir, Madras, Mysore and West Bengal. These special courts handle various categories of juveniles and young persons, namely pre-delinquent, delinquent, victimized, socially handicapped and physically and mentally handicapped. The metropolitan areas of Bombay, Calcutta and Hydera-

¹ My thanks are due to the Chairman, Children's Aid Society in supplying information for this article.

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bad, have specially appointed stipendary magistrates assisted by one or more honorary magistrates. The Home Department of the State Government makes the appointment of a juvenile court magistrate in consultation with the High Court of Judicature. The controlling authority in respect of juvenile court magistrates in the 3 metropolitan states, is the Chief Justice of the High Court of Judicature. In view of the independent position enjoyed by the judiciary, all courts including special juvenile courts constitute a single hierarchy with the Supreme Court of India at its head.

The juvenile court procedure is characterized by its informality. A few states do not allow advocates or counsels to appear in the juvenile court. Since it is a fundamental right granted by the Constitution to every citizen whether an adult or a child to have adequate legal defense, a counsel

or an advocate for defense may appear in a juvenile court as a matter of right.

METHODS OF TREATMENT OR DISPOSITION BY JUVENILE COURTS

A juvenile court deals with a juvenile or youthful offender in one of the following ways :

1. Restores to parents with or without bond,
2. Restores to parents with or without bond and keeps under supervision,
3. Releases on probation with or without supervision,
4. Commits to an institution for care and protection,
5. Commits to a special juvenile or Borstal Institute for long-term treatment,
6. Commits to an adult institution,
7. Admonishes and discharges,
8. Deals otherwise with any alternative suitable arrangement.

THE IMPACT OF ATARACTIC DRUGS ON A MENTAL HOSPITAL OUTPATIENT CLINIC

MARTIN GROSS, M.D.¹

The Outpatient Department of Springfield State Hospital was started more than 25 years ago as a follow-up treatment of paroled and discharged patients. For many years this department functioned at a leisurely pace. One or two psychiatrists from the hospital spent one afternoon every week in the clinic and saw about 3-4 patients each, a total of perhaps 300 interviews a year. During the fiscal year 1953-54, before the advent of ataractic drugs, there were 312 psychiatric interviews. Since that time, the number of patients who attended the clinic, and the number of psychiatric interviews have increased at an unforeseen pace (Table 1). For the fiscal year 1959-60,

TABLE 1

PSYCHIATRIC PATIENT INTERVIEWS
BALTIMORE OUTPATIENT CLINIC
SPRINGFIELD STATE HOSPITAL

<i>Fiscal Year</i>	<i>No. of Interviews</i>	<i>Fiscal Year</i>	<i>No. of Interviews</i>
1953-54	312	1957-58	1181
1954-55	394	1958-59	2686
1955-56	491	1959-60	3420
1956-57	861	(prorated from 10 mos.)	

we estimate a total of over 3,400 psychiatric interviews, more than 10 times as many as in 1953-54. How account for this increase? We are convinced that the main reason is the widespread use of ataractic drugs. In former times many patients came only reluctantly, and we had many cancellations. Today most patients attend the clinic regularly in order to obtain the drugs with which they had been released from the hospital. Formerly, those attending were mainly neurotics, alcoholics, and a few psychotics with specific problems, or whose families brought the patients for a check-

up. There were also epileptics who came for anti-convulsant drugs. At present the majority of the clinic population have had functional psychoses. They have been made aware of the necessity of continued medication in order to be able to continue a more or less normal and useful life in the community. More and more patients are referred to the clinic by their ward physicians upon release from the hospital. More staff members in our hospital are now convinced that chances for survival in the community are far better in those patients who continue to take ataractic drugs than in those who stop doing so.

We have just concluded a two-year, double blind study² on the discontinuation of ataractic drugs in chronic psychotic patients, conducted in the outpatient department, which has given us convincing evidence of the efficacy of such drugs. Patients were divided at random into a control group and an experimental group. The control group was continued under ataractic medication in the form of unidentifiable capsules. In the experimental group, medication was slowly decreased and finally replaced by placebos. Both groups had previously been observed for a preliminary period averaging 4½ months.

Table 2 shows that during the 6 month control period under treatment with active

TABLE 2

RELAPSES

	<i>No. of Patients</i>	<i>No. of Relapses</i>	<i>Per Cent Relapses</i>
Control Subjects 6 Months	46	6	13.0
Withdrawal Subjects 6 Month	98	50	51.0

¹ In collaboration with Irene Hitchman, M.D., Walter P. Reeves, M.D., Jordan Lawrence, M.S., and Pauline C. Newell, M.S., Springfield State Hosp., Sykesville, Md.

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drugs, 13% of the patients relapsed. On the other hand, 51% who had been under reduced or placebo medication relapsed. Thus, while about 1 patient in 8 relapsed during 6 months under active drugs, about 1 in 2 relapsed in a similar period under reduced medication or placebo. It is noteworthy that 21% relapsed during drug reduction and before they could be started on placebo. Chances for relapse were 3% during the first month after reduction began and rose to a peak of 19% during the seventh month (Graph 1). (Percentage figures for the last quarter of the year may be less valid than for the previous period as the

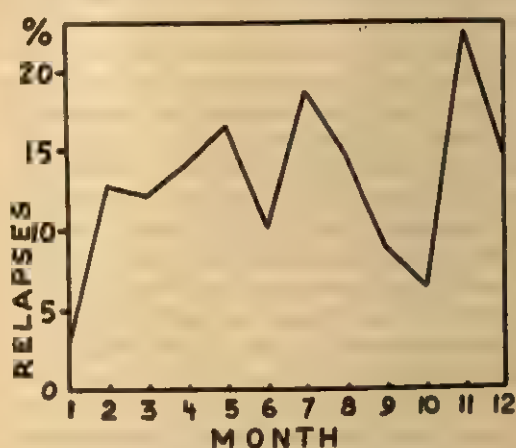


CHART 1

RELAPSES PER MONTH OF CASES UNDER
WITHDRAWAL OR PLACEBO IN PER CENT OF
PATIENTS UNDER OBSERVATION AT THE
BEGINNING OF EACH MONTH

number of patients under observation had shrunk to 16.)

We think that these results can be taken as conclusive evidence of the beneficial action of ataractic drugs on psychotic disorders.

The favorable adjustment in the community of patients under ataractic drugs is demonstrated in Table 3 which shows 4 levels of social adjustment. These figures were obtained from the records of 120 chronic psychotics who had regularly attended the outpatient clinic during the month of January 1959. Alcoholics, psychoneurotics and patients who had experienced only an acute psychotic break or were suffering from organic brain disease are not represented in this group. Thus these figures cannot be applied, without reservation, to the entire clinic population. Nineteen point two percent of these patients were self-supporting or, in the case of women, fully responsible at taking care of their household. Twenty-five percent were seeking work or working intermittently, or, if women, carrying household responsibilities with some help and supervision from relatives or friends. Twenty percent were working in specially arranged and sheltered jobs or, if housewives, functioning as helpers in the home. Thirty-five point eight percent were unemployable, dependent and fully cared for by others.

Table 4 shows that 23 patients of the previously mentioned group of 120 were self-supporting, (three even supported de-

TABLE 3
SOCIAL ADJUSTMENT LEVEL OF 120 PATIENTS

	No.	%
Level 1		
Pats. self-supporting	13}	19.2
Women—fully responsible homemakers	10}	
Level 2		
Pats. seeking work or working on & off	13}	25.0
Homemakers with help and supervision	17}	
Level 3		
Pats. working in specially sheltered jobs	12}	20.0
Homemakers functioning on inferior level	12}	
Level 4		
Unemployable and dependent	43	35.8

TABLE 4

STUDY GROUP ATTENDING OUTPATIENT CLINIC
SPRINGFIELD STATE HOSPITAL—JANUARY 1959

Means of Support	Total 120	
Self-supporting	23	80.8%
Family	69	
Pensions or Social Security	5	
Hospital funds	12	19.2%
Public welfare	11	

pendents). Seventy-four were supported by their families or lived from pensions or Social Security payments. Only 23 (19.2%) had to depend on public assistance. At the present rate of Department of Public Welfare payments of about \$72 per month, the expenditure from public funds for 23 patients is calculated as roughly \$20,000 per year. That is an average of \$165 per year for these 120 patients. Of course this does not include other Welfare expenses such as medical care, professional services of our Social Service Department, Vocational Rehabilitation, and other agencies, nor does it account for the expenses of running the outpatient department. However, we have estimated the cost of medication on the basis of the total amount of various drugs taken by 235 clinic patients during a single day. The expenditure for ataractic drugs per patient was 16.3c per day or about \$5 per month.

Drug treatment in mental disease, if effective, is certainly the most economic mode of treatment. In our clinic, patients are seen every 2 to 6 weeks and at present there are about 290 active patients. If each of these were to be seen only once a week in a psychotherapeutic interview, the full-time service of 7 psychiatrists would be required, provided that each could treat 8 patients daily. This is economically impossible at present. Our 290 patients are treated by 6 hospital psychiatrists, each of whom spends one day per week in the clinic and treats between 10 and 20 patients. Thus, only one-sixth of the psychiatric manpower is needed.

There are, doubtless, other reasons for the increase in outpatient activity: there is a considerable change in the attitude of the general population, which more and more accepts the responsibility for patients re-

leased from the hospital and placed in the community. There is the cooperation of the general practitioner who, until recently, felt helpless in dealing with psychotic patients. He can now treat the mentally ill in the way he knows best, by prescribing drugs. Then there is the change in the attitude of many psychiatrists. The organically and genetically oriented ones have lost their attitude of hopelessness and many analytically oriented psychiatrists now use drugs in the course of treatment.

Those who minimize the importance of treatment with ataractic drugs as "just another symptomatic therapy" overlook one important factor. For the first time psychotic patients and especially schizophrenics can be stabilized in the community. No doubt the treatment is symptomatic in most cases but so is insulin treatment in diabetes and anti-convulsive treatment in epilepsy. Once the maximum therapeutic result is obtained in the hospital and the maintenance dose of the ataractic drug is determined, a patient can return to his family and sometimes to his job. With continued medication a stable condition can be maintained, perhaps not on the pre-morbid or optimal level but on one which enables the patient to function in occupational, social and family life. Even recurring psychotic symptoms can generally be handled through increased medication. We have seen patients, though periodically hallucinated, cling to their jobs tenaciously and we have helped them with ataractic medication to live through such periods without a social breakdown. Only about 1 in 4 of the relapsed patients had to return to the hospital. Table 5 gives a breakdown of the rehospitalization rates of 108 relapses

TABLE 5
REHOSPITALIZATION

	No. of Patients Relapsed	No. of Patients Returned to Hosp.	Rate of Re-Hospitalization
Patients under active medication	38	19	50%
Patients during drug withdrawal or on placebo	70	9	13%

which occurred during our study. Nineteen out of 38 patients (50%) who relapsed under active medication in the preliminary or control phase had to return to the hospital. Of 70 patients who had relapsed after drugs had been reduced or completely withdrawn, only 9 (13%) needed rehospitalization. The rest were able to continue life

in the community, showing that the previous level of stability can generally be regained under resumed medication. We consider this social stability—never before achieved in the majority of psychotics—as the most important contribution of ataractic drugs to the treatment of patients in an outpatient department.

CLINICAL NOTES

(The Clinical Notes report the findings of the authors and do not necessarily represent the opinions of the Journal.)

COMBINATION DRUG THERAPY IN PSYCHIATRY

JOSEPH A. BARSA, M.D.¹

The use of a combination of drugs in the treatment of mental disorders has been castigated by some as "unscientific" and "shotgun therapy." Such criticism reflects an ignorance of the purpose and actions of psychotropic drugs.

Firstly, psychotropic drugs do not treat mental disorders but rather mental symptoms. The neurotic whose anxieties have been dissipated with tranquilizers still retains his neurotic personality structure with its unhealthy mechanisms; the schizophrenic whose delusions and hallucinations have disappeared through the influence of drugs remains schizophrenic in character structure; the involutional whose depression has been lifted with energizers still has the unhealthy attitudes which permitted the depression to develop. Furthermore, the individual mental patient, neurotic or psychotic, usually presents a multiplicity of symptoms.

Secondly, although psychotropic drugs have been broadly divided into tranquilizers and energizers, the drugs in their respective groups also differ from each other, both in kind and degree of action. It would seem reasonable, therefore, that there might be need for more than one drug to treat effectively the multiple symptoms of the patient. However, combined drug therapy should not be "haphazard therapy," but each drug should be carefully chosen for a particular symptom or constellation of symptoms. Such therapy is best administered by separate tablets for each drug rather than a fixed ratio of drugs in a single tablet.

Thirdly, patients show individual differences not only in their therapeutic response to the same drug, but also in their susceptibility to the development of disturbing side effects. At times, in order to avoid side

effects and still maintain therapeutic potency, it is necessary to combine two or more drugs at lower dosage; e.g., reserpine and chlorpromazine, chlorpromazine and trifluoperazine.

At this point it is important to describe the clinical actions of the drugs. Thus, tranquilizers have two chief clinical actions: a sedative action, and an anti-psychotic (i.e., anti-delusional and anti-hallucinatory) action. Individual tranquilizers contain these actions in varying degrees. Meprobamate and methaminodiazepoxide (Librium) have strong sedative actions, but no detectable anti-psychotic action. Reserpine has strong anti-psychotic action, but relatively weak sedative action.

Phenothiazine derivatives are best divided into three groups, according to both chemical structure and clinical actions. There is the *di-methyl group*: chlorpromazine (Thorazine), promazine (Sparine), triflupromazine (Vesprin); the *piperazine group*: prochlorperazine (Compazine), thiopropazate (Dartal), trifluoperazine (Stelazine), perphenazine (Trilafon), fluphenazine (Prolixin); and the *piperidine group*: mepazine (Pacatal) and thioridazine (Mellaril). According to their sedative strength, we have the di-methyl group, the piperidine group, and the piperazine group. However, in the order of their anti-psychotic effectiveness, they are: the piperazine group, the di-methyl group, and the piperidine group. The piperazine group has the greatest incidence of extra-pyramidal side effects, especially akathisia; next comes the di-methyl group with predominantly Parkinsonian symptoms, and, finally, the piperidine group.

Psychic energizers have three main actions: a stimulating action, an anti-depressant action (separate from the stimulating action), and an anti-psychotic action. Each

¹ Rockland State Hospital, Orangeburg, N. Y.

drug will show these actions to varying degrees. Thus, amphetamine derivatives have only a strong stimulating action. Monamine oxidase inhibitors, which include iproniazid (Marsilid), phenelzine (Nardil), nialamide (Niamid), pheniprazine (Catron) and isocarboxazide (Marplan), have a weaker stimulating action, a strong anti-depressant action, and no anti-psychotic action (indeed, they may cause acute exacerbation of the schizophrenic psychosis). Imipramine hydrochloride (Tofranil) has a still weaker stimulating action, but an equally strong anti-depressant action, no anti-psychotic action, and it, too, can exacerbate a schizophrenic reaction, though to a lesser extent.

Deanol (Deaner) has weak stimulating action, no anti-depressant action, and mild anti-psychotic action. Deprol, a combination of meprobamate and benactyzine, has strong sedative action, mild anti-depressant action, no anti-psychotic action.

In summary, psychotropic drugs treat symptoms only. Since the symptoms of mental disorders are multiple, and since the individual drugs differ in their clinical actions, it may be necessary to use a combination of drugs. Effective therapy, therefore, requires a thorough knowledge not only of the patient's symptoms but also of the clinical actions of the drugs.

REVISED SURVEY OF SELECTED PSYCHOPHARMACOLOGICAL AGENTS¹

JAMES P. CATTELL, M.D.² and SIDNEY MALITZ, M.D.³

Each drug is listed as follows: chemical (generic) name, rating (see below), registered name and manufacturer, range of daily dosage for ambulatory patients, side effects and general comments.

Rating Scale: Each drug is rated according to the following system:

Effectuality:	Toxicity and Side Reactions:
Good—1	Mild—A
Fair—2	Moderate—B
Poor—3	Marked—C

Thus, an effectual drug with minimal toxicity and side effects is designated: 1A; an ineffectual drug with marked side effects or toxicity: 3C

I. The Major Tranquilizers (used primarily for psychomotor agitation and severe anxiety and may decrease hallucinations and delusions).

A. Phenothiazine Derivatives

1. Amino-propyl side chain group.

Chlorpromazine, 1B, (Thorazine-Smith, Kline and French), 25-150 mg. q.i.d. Jaundice, liver damage, agranulocytosis, thrombocytopenia,

urticaria, contact dermatitis, photosensitivity, edema of the extremities, GI syndrome, Parkinsonism, akathisia, convulsive seizures, depersonalization, depression, hypotension, drowsiness, fatigue and cataleptic seizures reported. Possibility of liver damage and increased liability to thrombosis and embolism warrants greatest caution. Seizures following abrupt withdrawal reported.

Promazine, 2B, (Sparine-Wyeth), 50-200 mg. t.i.d. Same side effects as chlorpromazine. Less photosensitivity and jaundice but higher incidence of seizures.

Methoxypromazine, 3B, (Tentone-Lederle), 10-50 mg. q.i.d. Same side effects as chlorpromazine but apparently less chance of liver damage and agranulocytosis.

Trifluorpromazine, 2B, (Vesprin-Squibb), 10-30 mg. t.i.d. More potent and perhaps more rapid acting than chlorpromazine, with essentially the same side effects. Higher incidence of extrapyramidal symptoms; jaundice reportedly rare and only one agranulocytosis on record.

2. Piperidine ring side-chain group.

Mepazine, 3C, (Pacatal-Warner-Chilcott), 25-50 mg. t.i.d. Same side effects as chlorpromazine but

¹ Based on literature available about each drug as of June, 1960 and experiences at the Columbia-Presbyterian Medical Center.

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lower incidence of extrapyramidal symptoms and skin reactions. Possibly more agranulocytosis, seizures and atropine-like action. Regarded by some as ineffectual and too toxic for general use.

Thioridazine HCl, 2A, (Mellaril-Sandoz), 25-150 mg. t.i.d. Fewer side effects reported than with other phenothiazines but further studies needed. Leucopenic tendencies (reversible?), thrombocytopenia, galactorrhea, skin reactions reported. Hypotension, extrapyramidal symptoms, edema and photosensitization rare. Hepatic symptoms not reported.

3. Piperazine ring side-chain group.

Prochlorperazine, 2B, (Compazine-Smith, Kline and French), 5-15 mg. t.i.d. Fewer side effects than chlorpromazine but higher incidence of extrapyramidal symptoms. One report of spasm and glottis edema requiring tracheotomy. Jaundice and agranulocytosis not reported.

Perphenazine, 1-2B, (Trilafon-Schering), 2-16 mg. t.i.d. Fewer side effects than chlorpromazine, notably less drowsiness and absence of agranulocytosis, liver impairment and photosensitivity. Higher incidence of akathisia and dyskinetic syndrome. Convulsive seizures, cataleptic attacks in children, galactorrhea, angioneurotic edema, ankle edema, reduced appetite, GI disturbances and urinary urgency and incontinence have been reported.

Thiopropazate, 2B, (Dartal-Searle), 2-10 mg. t.i.d. Parkinsonism, akathisia and dyskinetic syndrome more prominent than with chlorpromazine. Jaundice and leucopenia not reported. Otherwise, comparable to chlorpromazine.

Trifluoperazine, 2B, (Stelazine-Smith, Kline and French), 1-5 mg. t.i.d. Fewer side effects than chlorpromazine. Parkinsonism, akathisia, dyskinetic syndrome, agitation and turbulence prominent. Occasionally may intensify psychotic symptoms. No reports of jaundice or agranulocytosis. Does not produce drowsiness. Hypotension, blurred vision, dryness of mouth and transient

macular eruption have been noted. Fluphenazine, 2B, (Permitil-White; Prolixin, Squibb), 1-10 mg. daily initially; 1-5 mg. daily for maintenance. (White recommends only 0.5-1 mg. daily.) Extrapyramidal signs and symptoms common. Leucopenia reported in 4 patients thus far. Marked hypotension resulting in neurocirculatory collapse has occurred in a few patients. No reports of jaundice or photosensitivity and skin reactions are rare. Blurred vision, dizziness, edema, nasal congestion, polyuria, perspiration, flushing, lethargy, depression, weakness, numbness, nausea, vomiting, constipation, diarrhea, weight gain and loss, anorexia, dry cough and convulsions reported as occurring occasionally. Least sedative effect of the phenothiazines. Special caution and lower dosage required in treating older patients.

B. Rauwolfia Alkaloids

Reserpine, 2-3B, (Serpasil-Ciba; Reserpoid-Upjohn), 0.5-1 mg. b.i.d. Jaundice and agranulocytosis not reported. Skin reactions, Parkinsonism, akathisia, dyskinetic syndrome, seizures, depression with suicidal ideation, depersonalization, hypotension, drowsiness, fatigue, excitement, edema and rupture of peptic ulcer reported.

Deserpidine, Canescine, Recanescine, 3B, (Harmonyl-Abbott), 0.24-2 mg. t.i.d. Fewer side effects claimed than reserpine.

Rescinnamine, 3B, (Moderil-Pfizer), 0.25-0.5 mg. b.i.d. Fewer side effects than reserpine.

Rauwolfia serpentina, whole root, 3A, (Raudixin-Squibb), 100-300 mg. daily. Fewest side effects of Rauwolfia group.

Rauwolfia serp., alseroxylon fraction, 3B, (Rauwiloid-Riker), 4 mg. daily. Fewer side effects than reserpine.

Medication to Prevent Drug-Induced, Extrapyramidal Syndrome.

Ethopropazine (Parsidol-Warner-Chilcott), 10-50 mg. q.i.d.

Biperiden (Akineton-Knoll) 2 mg. 1-3 times a day.

Trilixyphenidyl (Artane-Lederle) 2 mg. t.i.d.

Methanesulfonate (Cogentin-Merck

Sharp and Dohme) 1-4 mg. 1-2 times a day.

Procyclidine (Kemadrin-Burroughs-Wellcome) 2.5-5.0 mg. 3-4 times a day. Side effects that may appear with most of these: Dryness of mouth, blurring of vision. Giddiness, excitement, muscle weakness with high doses. Delusions and hallucinations with high doses in elderly patients. Caution in patients with glaucoma, tachycardia, prostatic hypertrophy (e.g., when parasympathetic inhibition is undesirable).

Medication for Hypotension with Neurocirculatory Collapse:

Levarterenol bitartrate (Levophed-Winthrop). Administered i.v. in 5% dextrose solution. (Epinephrine is contraindicated; may lower blood pressure further.)

II. The Minor Tranquilizers (for anxiety-tension states).

A. The Substituted Propanediol Group

Meprobamate, 2B, (Miltown-Wallace; Equanil-Wyeth); 200-400 mg. t.i.d. No convincing studies demonstrating superiority to barbiturates. Meprobamate medication may be associated with production of fever, malaise, nausea, vomiting, headache, increased peristalsis, cardiac dysrhythmia, hypotension with shock, skin rashes, angio-neurotic edema, a non-thrombocytopenic purpura, temporary leucopenia, itching, drowsiness, euphoria, restlessness, hypomanic conditions, diplopia and coma. Addiction reportedly widespread. Withdrawal syndromes may be severe, including convulsions with abrupt withdrawal. Potentiates alcohol, barbiturates and antihistamines.

Phenaglycodol, 3A, (Ultran-Lilly), 300 mg. t.i.d. Said to allay anxiety without dulling mental acuity or awareness. Further data needed.

B. Diphenyl Methane Derivatives

Azacyclonal, 3A, (Frenquel-Merrell), 200-400 mg. daily. Introduced as an anti-hallucination and anti-confusion drug. Value not confirmed.

Benactyzine, 3B, (Suavitil-Merck), 1-3 mg. daily. Contraindicated in "hostile" patients. May produce concentration difficulty, deperson-

alization, paresthesias, muscle weakness, dizziness, tension, nausea, vomiting, dry mouth, diarrhea, ataxia, palpitation, apathy, indifference. Recently combined with meprobamate (Deprol-Wallace) as an antidepressant-rating: 3B.

Hydroxyzine HCl, 3A, (Atarax-Roerig), 10 mg. t.i.d. Of questionable value except in very mild anxiety. No side effects yet reported.

Hydroxyzine pamoate, 2A, (Vistaril-Pfizer), 25-100 mg. t.i.d. Various reports of effectuality in every psychiatric syndrome and in almost every specialty of medicine. Minimal side effects.

Phenyltoloxamine, 3B, (PRN-Bristol), 50-200 mg. b.i.d.-q.i.d. Formerly *Bristamin*, a non-prescription antihistamine, 1951-57. Now recommended for anxiety states and certain psychosomatic disorders. Drowsiness, nausea, tachycardia and dryness of mouth reported.

Pipethanate, 2-3A (?), (Sycotol-Reed & Carnick), 3-6 mg. t.i.d. Drowsiness. More data needed.

C. Other Minor Tranquilizers

Aminophenylpyridone, 2-3B (?), (Dornwal-Wallace & Tiernan), 200-400 mg. t.i.d. Drowsiness, dryness of mouth, vertigo, nausea, blurred vision, stimulation, pruritis. More data needed.

Methaminodiazepoxide, 2B (?), (Librium-Roche), 10-20 mg. t.i.d. Occasional drowsiness (frequent in dosages over 50 mg./day). Paradoxical stimulating effect reported. Cumulative effect heralded by drowsiness. More data needed.

III. Anti-Depressives

A. The Hydrazines

Iproniazid, 2C, (Marsilid-Roche), 50 mg. daily in divided doses—reduced to 10-30 mg./day. Most effectual at 150 mg./day, but toxic effects may appear at doses above 50 mg./day. U. S. Dept. HEW has reported 180 cases of hepatitis, with 20% fatalities. Side effects: dizziness, ataxia, loss of muscular tonus, hypotension, accommodation disturbances, headache, dry mouth, flushing, sweating, euphoria, confusion, restlessness, depression, constipation, delay in starting urina-

tion and reversible hypochromic anemia. Edema, dyspnea, cardiac failure and neuralgic pain also reported. Potentiates alcohol, ether, barbiturates, meperidine, cocaine, procaine and phenylephrine. Patients receiving iproniazid should be given the entire vitamin-B complex concomitantly.

Pheniprazine, 1-2 B, (Catron-Lake-side), 12-3 mg. daily (initial and maintenance doses). Hypotension, red-green visual defect, mouth dryness, ankle edema, blurred vision, drug rash, constipation, delayed micturition. At least one fatal jaundice reported. List of drugs Catron potentiates is not yet complete. Watch for neurological syndrome with tremors, muscle rigidity and difficulty in locomotion. Further data needed.

Isocarboxazid, 2B, (Marplan-Roche), 30 mg./day initially with reduction to 10-20 mg. or less for maintenance dosage. Side effects essentially those of iproniazid except no evidence of liver damage reported yet. Overactivity, jitteriness, insomnia, hallucinations may occur in excited patients on higher doses. Contraindicated in epileptics until further studies completed. More data needed.

Phenelzine, 2B, (Nardil-Warner-Chilcott), 15 mg. t.i.d.—15 mg./day. Hypotension, nausea, ankle edema, delayed micturition, constipation, insomnia, drug rash, restlessness, headache, dizziness, heartburn. 50% of patients showed abnormalities in liver function tests in one report. Further data needed.

Nialamide, 2-3B, (Niamid-Pfizer), 50-200 mg./day—initial, and 12-25/day—maintenance. Essentially same side effects as other hydrazines. Liver involvement not reported (P). More data needed.

B. The Amphetamines

Dextroamphetamine, 2B, (Dexedrine—Smith, Kline and French), 2.5-10 mg. t.i.d. Side effects: Anorexia, insomnia, palpitation, anxiety and feeling of being "driven." Non-toxic when used in therapeutic doses under medical supervision. Occasional reports of psychosis and habituation when self-administered

in high doses. Contraindicated in patients with cardiovascular disease.

Dextroamphetamine with amytal, 1-2A, (Dexamyl-Smith, Kline and French), dose: same as above (includes 30 mg. amobarbital per 5 mg. D-amphet.). D-amphetamine side effects minimum or absent if dose is properly adjusted. Effect is to allay anxiety, relieve depression and facilitate integrated functioning. Often neutralizes depersonalization phenomena.

Methamphetamine, 2B, (Desoxyn—Abbott; Methedrine-Burroughs-Wellcome), 2.5-5 mg. t.i.d. Effectuality and side effects lie between dexedrine and dexamyl.

C. Other Anti-Depressives

Deanol, 3B, (Deaner-Riker), 25 mg. t.i.d. The few available reports find this drug useful in depression and schizophrenia. The rating given reflects the impression at the N. Y. State Psychiatric Institute.

Imipramine, 1-2B, (Tofranil-Geigy), 25-50 mg. t.i.d.—with less for maintenance. Two to 30 day lag before significant therapeutic response but majority during first week of medication. Tremor and agitation, nausea and vomiting, dizziness, perspiration, palpitation, dry mouth, constipation, headache, hypokinesia, blurred vision, extrapyramidal signs, difficulty in urination, dermatitis, insomnia, decreased appetite, syncope, photosensitivity, hypotension, edema. Hepatitis and acute myocardial infarction and reversible leucopenia reported. Further data needed.

Methylphenidate HCl, 2B, (Ritalin-Ciba), 5-10 mg. t.i.d. This drug and pipradol reportedly do not produce the unpleasant side effects of the amphetamines. Actually, they do. A shock-like condition may develop with tremor, sweating, tachycardia, headache, vertigo, motor restlessness. Reported to be useful in counteracting the lethargy associated with some tranquilizers.

Pipradol HCl, 3B, (Meratran-Merrill), 1-2.5 mg. t.i.d. May produce insomnia, nausea, skin rash. May aggravate existing anxiety and produce psychotic phenomena.

Said to be contraindicated in patients with anxiety, hyper-excitability, paranoia, agitation and obsessive-compulsive states.

Tranlycypromine, 2A (?), (Parnate-Smith, Kline and French, formerly SKF 385), 10 mg. t.i.d.-b.i.d. A non-hydrazine MAO inhibitor. Hypotension, dizziness, insomnia. More data needed.

IV. Psychotogenic Drugs :

Increasing publicity about hallucinogenic agents and claims that they expedite psychotherapy warrants the inclusion of this group. Many of these drugs contain the indole nucleus and are related to serotonin (5-hydroxytryptamine). Therapeutic effectuality and toxicity rating : 3C.

d-LSD-25 (Lysergic acid diethylamide) (Delysid-Sandoz). An ergot alkaloid with an indole nucleus. Not available commercially in the U. S. but can be prescribed in Great Britain. It is claimed that in repeated doses of 20-70 gamma, the drug will facilitate psychotherapy. In doses exceeding 100 gamma, this is a potent psychotogenic drug that produces visual hallucinations, depersonalization phenomena, autonomic disturbances and fluctuations of affect without impairing the sensorium. Effects usually continue for 8-24 hours and there are occasional instances of more protracted reactions.

O-Phosphoryl-4-hydroxy-N-dimethyl-tryptamine (Psilocybin-Sandoz). A Mexican mushroom derivative with an indole nucleus. Dosages of 6-30 mg. produce psychotic pheno-

mena similar to those seen with d-LSD-25. This is an experimental drug and further data are needed.

JB-329, (Ditrane-Lakeside). A tertiary amine derived from a group of 3-N-substituted piperidyl benzilates. Reported to have hallucinogenic and anti-depressant properties at 10-20 mg. doses. Our experiments indicate that it induces a toxic, confusional psychosis that is qualitatively different from those associated with d-LSD-25, Psilocybin and mescaline, in which the sensorium remains clear.

Mescaline. Has been synthesized as mescaline sulfate but can be obtained from peyotl cactus berries native to southwestern U. S. This experimental drug, in a dosage range of 0.5-0.75 Gm. produces a clinical picture similar to d-LSD-25.

There is no conclusive evidence that these drugs are more effectual in facilitating psychotherapy than such drugs as amobarbital sodium, methamphetamine and other related ones, when combined with psychotherapy. These potent psychotogens can and do release severe psychopathological symptoms in some individuals, including acute dissociated states, depression and self-destructive behavior as well as paranoid syndromes and acutely disturbed and aggressive behavior. Such drugs should be used only in a hospital by psychiatrists familiar with their effects. Adequate facilities and personnel must be available to manage untoward reactions, either physiological or psychopathological.

TRIFLUOPERAZINE : A REPORT OF A CLINICAL TRIAL IN BACK WARD PSYCHOTIC PATIENTS

JOHN A. GUIDO, M.D., AND GEORGE Y. ABE, M.D.¹

Since the introduction of the phenothiazines, clinicians have reported satisfactory symptomatic relief of psychiatric disturbances. Several have supported

the contention that such pharmacological therapy has been more useful in the management of chronically ill patients, yet there still exists the serious problem of accumulation of chronically regressed psychotic patients on the so-called "back ward." Despite the interruption of the regressive

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course of their illness, many patients continue to display psychotic mechanisms on examination. In our two months' study we have termed such treated patients as "corrected psychotics," since only their interpersonal adjustment is obviously more appropriate.

Trifluoperazine is a recent phenothiazine derivative which was selected for a study of its effects on a group of 20 "back ward psychotic patients." The following categories were included: 11 chronic undifferentiated schizophrenics, 8 chronic brain syndromes with psychotic reaction, 1 chronic brain syndrome with mental deficiency.

The drug was given in repeated doses throughout the day. Initially, the dose of 2 mgms. t.i.d. was increased after the first week to as high as 30 mgms. b.i.d. depending upon the clinical response. The most suitable dosage in the majority of the cases was approximately 20 mgms. on a b.i.d. schedule. Injectable trifluoperazine was administered in one patient up to 10 mgms. daily in divided doses. Blood pressure readings, urinalysis and hemograms were recorded.

RESULTS

During the first 6 weeks, improvement was noticed in 65% of the patients. Many were eating and sleeping better; others became less destructive, and participated in the ward routine. They complained more of their physical problems such as ingrown toenails, halitosis, dermatoses, wanting haircuts, which before trifluoperazine went seemingly unnoticed by the patient. There were fewer injuries from assaultive behavior, fewer accidental falls, marked reduction of hours in the "short hall" of seclusion; and many took pride in more appropriate grooming. One of the patients, who had "not talked" over the past 10 years, cheerfully asked the attendant on the ward if he could use a broom to help with the work on the ward.

The maximum tolerated dose was 20 to 60 mgms. with the only side effect of pseudo-Parkinsonism, and akathisia, which was noticeable at approximately 40 mgms. in the largest number of patients. The onset

of dyskenetic symptoms was more obvious early if the drug was administered in large doses initially. These were quite readily reversible with an anti-Parkinson drug, or reduction of dosage, and if immediate relief was necessary, intravenous caffeine sodium benzoate was administered.

CONCLUSION

The double blind method would not have been useful in this study because of the frequency of extra-pyramidal side reactions, and the 10-22 year period of hospitalization of the patients with various therapy regimens. Therefore, the patients served as their own controls. It was found that the largest number of patients improved over approximately 6 weeks, and steady improvement was noticeable in the remainder of the patients when the drug was continued. This drug is useful in chronic psychotic patients. There were no noticeable urinary or hematological side effects, or variations in blood pressure.

As compared to the other tranquilizers, trifluoperazine exerted a more appropriate and definitive controlling effect on aberrant behavior. As reported elsewhere, it was found to be noticeably more beneficial in the chronic back ward patients than other phenothiazines and serpentina derivatives; it permitted the utilization of other therapeutic techniques and rehabilitation and re-socialization regimens(1, 2, 3). The Rauwolfias and phenothiazines, alone or in combinations, frequently produced indifference as contrasted to the freely outgoing and attentive behavior produced by trifluoperazine. The seclusion hours were appreciably reduced. The least amount of beneficial effect was in the lobotomized patient. Patients were noticeably motivated toward ward and ancillary therapies. The improvement in all cases described is purely symptomatic. Most of the patients who were actively hallucinated continued to experience these phenomena, although apparently seemed less motivated to act upon them(4).

The drug is found to be worthwhile, and further study is warranted to avoid drawing definite and final conclusions from this simple clinical trial.

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ON THE PARENTERAL USE OF AMITRIPTYLINE (ELAVIL—MERCK): A PRELIMINARY REPORT

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Amitriptyline,² a new antidepressant agent has been reported by Dorfman to have clinical effectiveness comparable with the presently available antidepressant drugs. Amitriptyline, 5-(3-dimethylamino-propylidene)-dibenzo [a,d] [1,4] cycloheptadiene hydrochloride, structurally resembles imipramine and shows the same spectrum of pharmacologic activity. Neither of these agents is an amine oxidase inhibitor.

Studies in dogs in which 2 mgm./Kg. was administered intravenously induced a small fall in blood pressure followed immediately by a minor increase in pressure. A larger dose of 4 mgm./Kg. given rapidly produced a transient fall which recovered to normal within 10 minutes. No electrocardiographic changes were observed. Chronic oral administration in animals showed no effect on the cardiovascular system.

In the course of the treatment of over 30 patients with Elavil given orally, it was found that the drug could be administered parenterally both intramuscularly and intravenously without the development of any side effects other than drowsiness when an excessive dose was given. Twenty-three patients ranging in age from 18 to 78 were given Elavil in doses ranging from 10 to 30 mgm. intravenously on 1 to 19 occasions, in office practice and at Roseneath Farms Sanatorium. Significant changes in pulse

rate or blood pressure did not occur nor was postural hypotension observed in these patients. Drowsiness was encountered in the 25 to 30 mgm. dose range. The usual psychophysiological response could be described as a pleasant state of relaxation. In 7 patients there seemed to be increased interest in eating. Parkinsonism or any form of basal ganglia involvement as well as other significant side effects were noteworthy in their absence. It was my impression that this drug acted both as a tranquilizer and as an antidepressant through its influence on the "anxiety factor" in many depressions.

In this series of patients there were two who were depressed, with anorexia and a significant degree of anxiety, who had also suffered with cerebral insults with pyramidal tract signs as well as some evidence of extra pyramidal involvement. Shock treatment which had been used for previous episodes of depression was considered too dangerous now because of evidences of cerebral insufficiency. These patients were given injections of 10 to 15 mgm. intravenously once or twice a day for 12 days along with an oral dose of 50 mgm. b.i.d. The rapid favorable response evidenced by a marked improvement in gait (without significant change in objective neurologic finds) as well as the lessening of anxiety was impressive to the nursing staff and to the doctors. The subsequent intravenous administration in 10 to 15 mgm. doses to 3 elderly patients who were tense and had tremors brought about a response of less-

¹ Medical Tower Bldg., 255 South 17th St., Philadelphia 3, Pa.

² Merck, Sharp & Dohme, Division of Merck & Company, Inc. has assigned the trademark Elavil to amitriptyline.

sening of tension; diminution to removal of tremor (transient) and a more satisfactory interview.

The relatively rapid removal of tension with or without elevation of mood in patients with definite or probable organic pathology in the central nervous system, without the development of disturbing side effects, suggests that this possible indication for the drug be studied by other investigators. From my extended experience with the use of a variety of tranquilizers and

other drugs in the treatment of the elderly patient with tension and/or anxiety there would seem to be very few which are active and yet free of possible serious side effects when given intravenously. The objection that there may not be a great need for the intravenous use of such a drug may be justifiable but one can not deny that it is comforting to have available a drug which can be used safely when a rapid response is desirable.

CLINICAL TRIAL OF METHAMINODIAZEPOXIDE (LIBRIUM)

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MANFRED BRAUN, M.D.¹

Methaminodiazepoxide (Librium)² was released as a non-phenothiazine tranquilizing agent reportedly beneficial in the therapy of various psychiatric disorders (1, 2, 3).

At the Bronx V.A. Hospital, 74 patients with a variety of diagnoses were selected for a clinical study of this drug. Depending upon the therapeutic response, the drug was given in divided doses of 40 to 300 mg. daily for 6 to 8 weeks. No other chemotherapy was given. A period of 3 to 10 days without chemotherapy, following admission, was allowed for hospital adjustment, spontaneous improvement, and for subsidence of the enthusiasm generated by current publicity of a new wonder drug. Patients were evaluated weekly by a team of doctors, nurses, and occupational therapists. Routine urinalysis, blood count, and alkaline phosphatase were obtained weekly, and the blood pressure was recorded (erect and sitting) twice weekly; the same data had been obtained prior to beginning medication.

Therapeutic effects varied markedly from patient to patient and from ward to ward. Contagious enthusiasm and placebo effect were marked in 24 patients. These individuals were dropped from the study and the evaluation of the drug continued with the remaining 50 patients.

Anxiety was the symptom which responded most consistently to treatment. Twenty-two of 40 patients with this symptom in all diagnostic categories showed marked and sustained reduction of anxiety while on the medication; this improvement was not reproducible by the identical-appearing placebo.

Other symptoms were not affected. In contrast to reports mentioned above, we found no notable improvement in 6 of 9 obsessive-compulsive patients; 3 showed some relief of tension regarding their rituals but no actual change in their behavior occurred. Three of 4 patients with phobic reactions had no relief; 1 showed moderate improvement. Most patients experienced moderate drowsiness during the first week or so.

Laboratory tests revealed no abnormalities, except for reversible eosinophilia of 6 to 9% in 8 patients. Systolic B.P. taken in erect position dropped 10 to 20 mm. mercury in 5 patients on 40 mg. daily, and as much as 40 mm. in 2 patients. This occurred in the first week of therapy and reverted to previous levels within 2 weeks without interruption of medication; some of these patients sensed orthostatic "faintness" without syncope, but others described this sensation with normal B.P.

Interesting incidental findings include hostile and/or aggressive acting out on the part of 4 passive dependent patients; this

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² Product of Hoffmann-La Roche Inc., Nutley, N. J.

aggressive behavior was not related to psychotherapy. Eight patients noted that the drug seemed to render them more sensitive to alcohol, *i.e.*, less alcohol was required to cause intoxication, and 2 patients had episodes of violent destructive behavior suggestive of pathological intoxication. Two disturbed schizophrenics with repeated self inflicted cigarette burns, who did not respond to 1200 mg. of chlorpromazine daily, stopped burning themselves when given 300 mg. of methaminodiazepoxide per day. Patients who suffered from depression were not helped by Librium; however, 5 patients with depression were given the drug in conjunction with EST because of considerable apprehension regarding the treatment. These patients now accepted the treatment and became less apprehensive concerning it. This effect disappeared when the drug was temporarily stopped.

In summary, methaminodiazepoxide was found to be most beneficial in relieving the anxiety arising from anxiety neuroses; its effect on anxiety in other psychiatric conditions was more limited, variable and unpredictable. Its influence on other symptoms was minimal. Patients should be warned of possible lethargy, and of the alcohol-potentiating effect of the drug. Further observation of its usefulness in conjunction with shock therapy is warranted.

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THE USE OF FLUPHENAZINE (PROLIXIN) IN REHABILITATION OF CHRONIC SCHIZOPHRENIC PATIENTS

LEON REZNIKOFF, M.D.¹

A group of 50 chronic schizophrenics refractory to ECT and numerous ataractic drugs had been treated for 3 to 4 months with fluphenazine². Patients selected for this study had been uncooperative, withdrawn schizophrenics who had been considered in the past, as hopeless even for institutional adjustment; it had been practically impossible to engage them in any institutional activities. On the average, duration of psychosis was over 12 years. The youngest patient was 17 years old, the oldest 70. There were 42 males and 8 females.

Because of prolonged action of fluphenazine and high potency, the drug was administered only once a day.

The initial dose consisted of 2.5 mg. for some patients and 5 mg. for others; the dose was gradually raised to a maximum of 20 mg. per day. When maximum improvement was achieved, the dose was gradually

reduced to maintenance dose of 2.5 or 5 mg. per day.

Extrapyramidal signs are the most important and frequent side effects of this drug. While most patients began to show extrapyramidal system signs when the drug was raised over 10 mg. per day, there had been a few patients who developed these symptoms on 5 mg. per day, and 16 (32%) did not show extrapyramidal symptoms even after 12 weeks on as large doses as 15 mg. to 20 mg. per day. These were controlled by reducing the dose of fluphenazine and administration of Akineton, Artane or Cogentin.

An interesting beneficial side reaction occurred in one case.

E. C., a 35-year-old schizophrenic woman was also suffering from advanced rheumatoid arthritis; for a year before admission to the mental hospital she spent most of her time in bed because of crippling arthritis; she had been treated with Cortisone, but developed peptic ulcer; treatment of arthritis was then switched to Butazolidin, but it also had to be discontinued because of blood dyscrasia. Mean-

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² Fluphenazine was kindly supplied for this study by Squibb and Sons under trade name, Prolixin.

while her condition deteriorated to such degree that she had to be committed to our hospital. She was started here on 5 mg. fluphenazine per day; a week later the dose was increased to 10 mg. per day. Two weeks after treatment was started there was noticed not only marked improvement in her mental condition, but all discomfort and pain from arthritis disappeared. The dose of fluphenazine was gradually reduced to 5 mg. per day and later to 2.5 mg. She was released for convalescent care after 3 months on this therapy.

Blood counts were made at frequent intervals; a few patients had slight leucopenia, but no cases of agranulocytosis, skin rash or jaundice had been observed.

Of the 50 patients treated with fluphenazine, 29 (58%) improved sufficiently to be considered for convalescent care or achieved a fairly good institutional adjust-

ment; 21 patients (42%) showed only slight or no improvement, and therefore classified as unimproved.

SUMMARY AND CONCLUSIONS

1. Fifty chronic schizophrenic patients with an average duration of mental illness of over 12 years and refractory to any other treatment had been treated with fluphenazine for a period of 3 to 4 months.

2. Twenty-nine patients (58%) improved and 21 (42%) remained unimproved.

3. The dose of fluphenazine varied from 2.5 mg. to 20 mg. per day. When the dose of fluphenazine was raised over 10 mg. per day, 50% of patients developed extrapyramidal symptoms.

4. Fluphenazine is a valuable adjunct in the total program of rehabilitation of chronic schizophrenic patients.

CONVULSIONS ASSOCIATED WITH ANTI-DEPRESSANT DRUGS

W. L. SHARP, M.D.¹

Because of increasing interest and usage of the mono-amine oxidase inhibitors, I wish to submit the following 3 case reports of epileptiform seizures occurring following use of these drugs.

Case No. 1.—P.C., age 39, was placed on imipramine (Tofranil—Geigy) 25 mgm. t.i.d. p.c. on 8/3/59. In three days this was increased to 50 mgm. t.i.d. p.c. On 8/15/59 this patient experienced a definitely described grand mal seizure, with total loss of consciousness, amnesia, and jerking of all extremities; witnessed by his wife. Following this grand mal seizure, he was immediately hospitalized and a lumbar puncture done, which was all negative.

Because of the patient's resistive depressive reaction, on 10/5/59, Niamid 25 mgm. t.i.d. p.c. was prescribed. On 10/19/59 he had another grand mal seizure with jerking of all extremities, total unconsciousness, and frothing at the mouth. This medication was promptly stopped and the patient placed on Dilantin 1/10th gm. plus Phenobarb. gr. 1/4th p.c. and h.s. No more seizures were experienced and none has been experienced to date (6/14/60).

On 12/18/59, an EEG was reported as "undoubtedly abnormal and suggesting the

possibility of some temporal lobe dysfunction. No precise localized lesion such as tumor was indicated at that time."

Case No. 2.—E.P., age 35: On 9/10/59, because of a resistive reactive depression neurosis, this patient was placed on phenelzine (Nardil) 15 mgm. t.i.d. By 10/24/59, it was reported that she had had two "fainting spells" with definite losses of consciousness and amnesia. Later, two grand mal seizures with jerking of all extremities and even bruises to patient in falling were reported. The drug was stopped and Dilantin 1/10th gm. t.i.d. p.c. plus Phenobarb. gr. ss p.c. and h.s. were prescribed. An EEG could not be obtained. This patient had never had any type of seizures or spells like this in her past life. She was kept on Dilantin and Phenobarb. until 3/7/60. She has never had any more seizures of any type, to this date (6/14/60).

Case No. 3.—G.M., age 63: This patient had never been known to have any type of losses of consciousness, fainting spells or seizures in his past. Because of his tendency to be a recurrent chronic depressive, he was placed on Niamid 25 mgm. t.i.d., on 9/1/59. By 12/3/59 he had a grand mal spontaneous seizure. Because of the experience of the first

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two cases, Nafmid was immediately stopped. He was given Phenobarb. grs. 1½ at bedtime and two Fiorinal tablets q.4.h., p.r.n. for headaches. This has gradually been discontinued and Librium 10 mgm. t.i.d. has been substituted. No seizures have been reported to date (6/14/60).

All 3 cases had mild auras of crawling, cramp-like sensations ascending through the extremities upward, immediately preceding the seizures.

I have treated a total of 58 cases on three of the mono-amine oxidase inhibitor drugs. All 58 cases were given the therapeutic dosages usually recommended by their respective drug manufacturers.

COMMENT

These major side reactions to these drugs all pose several questions and points :

1. That they may not exactly be "the answer to a general practitioners' prayer" as

some drug manufacturers would have you believe. They are certainly not the full answer to the psychiatrist who might possibly be sued for giving potentially convulsant-inducing drugs to patients, some of whom might be driving a motor vehicle. (A grand mal convulsion could presumably cause more trouble to a car driver than the usual doses of tranquilizers or sedatives given to office patients.)

2. Should these drugs be given at all except to hospitalized patients under complete observation where (a) suicide can be prevented and (b) where they would not be driving a motor vehicle ?

CONCLUSIONS

1. From my results of three cases developing epileptiform seizures, out of 58 cases, which have been on the more commonly used MAO drugs, it would appear that we could expect this unwelcome reaction in about 4 or 5% of cases.

PSYCHIATRIC FACILITIES IN TOKYO AND TEL AVIV, 1958

IRWIN J. KLEIN, M.D.¹

The writer visited Tokyo University in May, 1958, and was cordially received by Professor A. Kimoto. The psychiatric and neurological departments, which are combined, have an outpatient census of about 8,000 annually. They have 40 beds and see both psychiatric as well as neurological cases. From here patients are sent to the Matsuzawa Municipal Psychiatric Hospital which has about a 1,000 bed capacity. Treatment generally has been the same recently (insulin and ECT) even after introduction of drugs (reserpine, chlorpromazine, etc.). Last year they found that the results with new drugs were, generally speaking, the same as with ECT, although the control of patients was easier. Recurrences were about the same as when ECT alone was given.

They are biologically oriented but psychotherapy is used extensively. Of the O.P.D. patients, about 10% are schizophrenic, and the same percentage prevails for

the inpatient population. The rest are mostly psychoneurotics, with a few central nervous system luetics, and manic-depressives. An interesting point is that they do not have a hard and fast distinction between the terms schizophrenic and schizoid.

There are few psychoanalysts in Japan. Most psychiatrists are connected with some hospital. Those connected with prisons, examine for the courts and usually study criminology. Child psychiatry is confined to the Umego-CKA hospital in Tokyo, where about 100 schizophrenic, as well as feeble-minded, children, are confined. They also have 500 adults in the institution.

Tokyo University also has a brain research institute with a wonderful specimen collection where comparative brain anatomy is studied in mammals.

The Matsuzawa Psychiatric Hospital (director, Dr. S. Hayashi) was established in 1874 as a municipal hospital on the outskirts of the city on 50 acres, and houses

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1,120 patients of whom 55% are male and 45% female. There are 30 buildings, of which 22 are used as wards, and the others, as kitchens, occupational therapy wards and auditorium. Of the population, 68-79% suffer from schizophrenia, 7-13%, general paresis, 3-5%, epilepsy, 1-5%, feeble-mindedness and 4-15%, others. There are a few neurological cases (Wilson's disease, Huntington's chorea, as well as manic-depressives and psychopaths). About 10% are criminal cases sent by the courts. In addition, they had 15 cases of drug addiction (morphine, heroin and benzedrine), as well as a few cases of alcoholism, head trauma, post encephalitic syndrome and cerebral arteriosclerosis. The hospital is affiliated with Tokyo University and has 18 doctors on the staff as well as 90 male and 110 female nurses. The physical plant, like the University, is dilapidated and in need of repairs. All patients sleep on the floor which is, of course, the custom in Japan. They use chlorpromazine, reserpine and other tranquilizers with fair results. ECT and insulin are used but not metrazol. They perform between 30 and 40 autopsies per year. An interesting point is that the suicide rate for young people in Japan is high, especially for females, but no definite reason can as yet be ascribed. Also, since the war, a lot of benzedrine addiction has occurred, the symptoms so closely resembling schizophrenia (auditory hallucinations, delusions, feelings of strangeness), that special studies are going on.

The writer next flew to Tel Aviv, Israel. The largest psychiatric hospital in Israel is at Acre (550 beds). I visited the Bat Yam Government Hospital on the outskirts of Tel Aviv, established December, 1944, which is the second largest psychiatric hospital. Dr. Yarmolowitz, originally from Po-

land, is in charge, and there are 10 doctors on the staff. The one story buildings are in good repair, clean and efficient, and were originally built for prisoners of war.

This hospital has 380 beds with a population of 402, 60% females and 40% males. In general, there is an open door policy and patients are on either short or long leave. The atmosphere is cordial and friendly. The outpatient clinics average 420 per month. Since they started chlorpromazine (Largactil), they claim a reduction of more than 50% in ECT. However, for depressive and confusional states, ECT is still given, usually combined with chlorpromazine. Metrazol is very rarely used. Insulin is still used in early schizophrenia and catatonic states, although not as much as in previous years. Chronic patients remain about 5-8 years, depending on the home conditions of the patient. There is an excellent occupational therapy department with woodwork, looms for rug making and tablecloths, and basket weaving, etc.

In Israel, mental defectives are under the supervision of the Social Service Department, not the Health Department (which takes in the Department of Mental Hygiene).

Another mental hospital, Ben Yacov Hospital, originally a military barracks, has more than 320 beds. In Jerusalem, the chronic hospital has a "working village" with facilities for rehabilitation. In Neve-On, 100 tubercular psychotic patients are housed near Tel Aviv.

Suicide is common in Israel; about 4-6 cases per month. Many drug addicts (mostly opium) are treated at Bat Yam. These come from Egypt and Asia. There are also cases of heroin and hashish addiction, treatment for which is mostly with chlorpromazine.

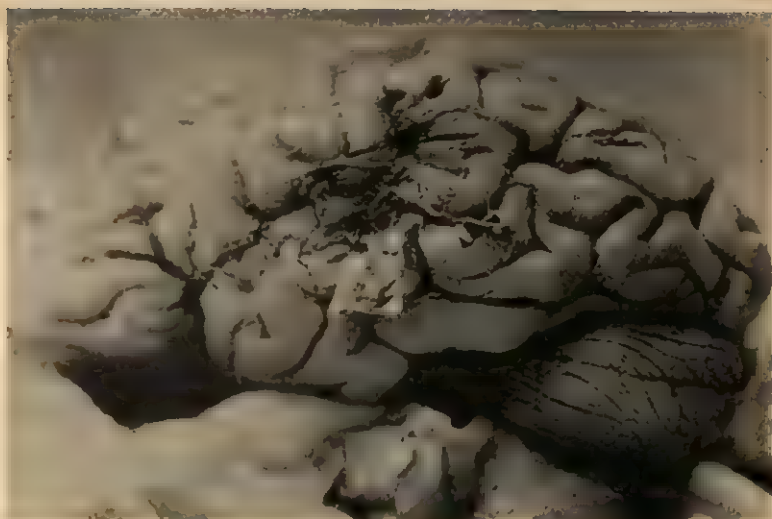


FIGURE 3



FIGURE 4



FIGURE 1



FIGURE 2

HISTORICAL NOTES

GOTTLIEB BURCKHARDT, THE FATHER OF TOPECTOMY

CHRISTIAN MUELLER, M.D.¹

There is less talk these days about the so-called psychosurgical methods. But it was by way of leucotomy and topectomy that the first attempts were made to regularise the emotional oscillations of psychotics and to reduce tension states with motor and verbal agitation. Since then, the era of tranquilizers has intervened and has given us a more practical and less dangerous instrument to treat the mentally ill. Psychosurgery in turn has become interested in other procedures (pallidectomy) and other regions of neuropsychiatry (Parkinsonism). The great neurologist Egas Moniz is regarded as the inventor of psychosurgery. Yet a few years back it was discovered that a Swiss psychiatrist, Gottlieb Burckhardt, had attempted to attack the brain with the feeble means of the period long before Moniz. Since then, the name of Burckhardt is quoted in all treatises, especially in the U.S.A. But who knows more about Burckhardt than his name and Swiss origin? We have tried to find some traces of his life and thus to reconstruct this short chapter of Swiss psychiatric history.

Gottlieb Burckhardt (Fig. 1), was born 1836 at Basle, was a scion of the famous old Basle family of Burckhardt. His father was a doctor before him. Gottlieb studied at Basle, Goettingen and Berlin, and then became a general practitioner in his home town. At that period already he seems to have been interested in scientific problems. For instance, when obliged to spend some time at Pau for health reasons, he wrote a study of the climatology of that city. He was also passionately interested in nervous diseases and electrotherapy just like that other great Swiss psychiatrist and psychotherapist of

the period, Paul Dubois. Thus in 1873, he accepted the position of physician at the psychiatric University clinic of Bern, Waldau. In the same year he issued his most voluminous publication *Physiological Diagnostics of Nervous Diseases*.

He worked at the Waldau under old Professor Schaerer and their scientific or administrative discussions must have been rather animated; both were very sociable and musicloving, but also rather excitable men. At this time Burckhardt started to review important psychiatric publications in the *Korrespondenzblatt für Schweizer Aerzte*; he expressed his opinion frankly and didn't mince words. He cooperated on the memorial volume for Albrecht von Haller and in 1879 wrote the annual report of the Waldau.

During his years at Berne, his main interest was the physiology of the brain. He looked for correlations between brain temperature and mental disease. He also studied brain circulation and brain movements. His ideas, especially concerning oxygen consumption of the brain, were taken up and usefully applied in 1907 by Hans Berger, the future inventor of the encephalogram. Burckhardt collaborated regularly on the *Allgemeine Zeitschrift für Psychiatrie* and was probably at that time its only Swiss correspondent. In 1881 a young intern worked under him, who was to revolutionize world psychiatry: Eugen Bleuler. In 1882 he became director of the clinic Préfargier. This clinic is beautifully located at the lake of Neuchâtel and has preserved its noble, classicist, external appearance. There he continued his research, participated in meetings of the Neuchâtel doctors and published several papers, especially in the medical review of French speaking Switzerland, on aphasia, on a case of brain tumor, and on hypnosis. He delivered a number of lectures and continued his activities as critical reviewer.

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In 1889 at Berne, his pupil and assistant Ludwig August Müller published a thesis on the topographical relations between brain and brain case. In an appendix, the author mentions that his chief, Dr. Burckhardt, has had the opportunity to check his methods of localisation during surgical interventions in the living. Thus Burckhardt must have performed such operations around 1888. This was rather daring as neither he nor his collaborator had any special surgical experience, when they operated in a small room at Préfargier. He acted probably with a twofold intention. Above all he hoped to invoke improvement in schizophrenics who suffered from hallucinations and asocial attitudes. But perhaps he also hoped to satisfy his scientific curiosity and to see confirmed his theories concerning the physiology of the brain.

His conceptions of the genesis of psychotic phenomena and their elimination were extremely simple and an offshoot of his physiological theories. He tried "to extract from the brain mechanism the emotional and impulsive element in order to bring back the patient to calm." He writes :

If excitation and impulsive behavior are due to the fact that from the sensorial surfaces excitations *abnormal* in quality, quantity and intensity do arise, and do act on the motor surfaces, then an improvement could be obtained by creating an obstacle between the two surfaces. The extirpation of the motor or the sensory zone would expose us to the risk of grave functional disturbances and to technical difficulties. It would be more advantageous to practice the excision of a strip of cortex behind and on both sides of the motor zone creating thus a kind of ditch in the temporal lobe.

Thus topectomy was born. Its immediate goal was to put an end to verbal excitation, to a logorrhea, which for Burckhardt was the point of departure of delirious ideas. The minutes of the operations give us exact data on the surgical technique used. It was extremely simple. After a morphine injection, the patient underwent chloroform anesthesia. The skin was incised, the vessels tied, trepanation was performed at the place indicated with an instrument of a diameter of 2.8 cm. After opening the dura

and the pia mater, Burckhardt took off the cortex a piece weighing about 1.5 g. Then he sutured. The operation had lasted from 9:15 to 12 a.m.

He kept a minute-book where he recorded with his own hand his operations. Burckhardt sometimes performed several operations upon the same patient. He also took impressive photographs of his patients (Fig. 2). The place of operation is clearly visible. Fig. 3 shows the brain of a patient who had been operated and died later. It also clearly demonstrates the operatory lesion. It is amazing that operations performed with very simple instruments, in general did not produce dangerous hemorrhages. Fig. 4 shows the instrument used by Burckhardt, which is still kept at Préfargier and which we reproduce with the kind permission of the present director, Dr. Riggenschach.

In certain cases Burckhardt had to operate several times in order to come closer to his goal of interrupting transcortical connections. He was asked whether his results really justified an intervention which was not without dangers. He answered that in spite of the small number of cases and of favorable results, he felt the operation amply justified in view of the otherwise unavoidable psychological deterioration which awaited these patients. Burckhardt seems to have operated 6 or 7 persons. The exact number is not known.

All patients were what we would call today chronic schizophrenics. On account of their constant excitation, aggressiveness and uncleanness they had offered great custodial difficulties. Thus Burckhardt selected about the same type who was later submitted to leukotomy. We know that 4 patients became calmer after the operation, no longer needed isolation and were more accessible. Burckhardt himself did not speak of cures, but only of improvements. One patient died as an immediate consequence of the operation.

In 1890 he went to Berlin to a psychiatric meeting and communicated his results to a stupefied audience. The bomb had exploded. He published in the following year his "Ueber Rindenexcisionen als Beitrag zur operativen Therapie der Psychosen" in the *Allgemeine Zeitschrift für Psychiatrie*, but

his report had been quoted and commented upon before in several medical journals.

It is a strange fact that this sensational report concerning a daring therapeutic intervention was at the same time his last scientific accomplishment. A shadow fell upon his life and his activities. Bad luck and difficulties which we will not discuss here in detail pursued him.

Why did Burckhardt not continue his experiments? Why did he not operate other patients, though he had asked in his publications, that his colleagues control and continue his experiments? We do not have any direct answers to these questions. The fact that his immediate superiors felt uneasy with this bold operator might have been a factor. The death of one patient might have dampened his enthusiasm and made him more cautious. It is certain that the Swiss psychiatrists of the time were quite sceptical in regard to the value of his methods, judged them dangerous and therefore did not use them.

The death of his wife and of one of his

sons, professional troubles, all contributed to his leaving Préfargier and retiring to Basle. There he became again director of a clinic for nervous diseases, the "Sonnhalde." His death from pneumonia occurred in 1907, shortly after his retirement from this post. Except for two reviews of works of Moebius and Goldscheider and a necrology of his old chief, Professor Schaerer, Burckhardt did not publish anything after his paper on cortical excisions. Had he become afraid of his own daring which had driven him during his operations and which certain people had regarded as foolhardiness? We don't know.

One thing is certain: Burckhardt's name will always occupy a place of honour in the history of psychiatry, not so much because by accident he found something which with a more refined technique became a universally known method, but because he was a man who did not look at science as a form of recreation based on abstract theories, but as a necessary preparation for therapeutic action.

DR. WILLIAM CULLEN ON MANIA

ERIC T. CARLSON, M.D., AND R. BRUCE McFADDEN, A.B.^{1, 2}

One of the most important and influential figures in 18th-century medicine was Dr. William Cullen (1710-1790). Possessed of a thorough and varied medical education which included a medical degree from the University of Edinburgh, Cullen became Professor of Chemistry at the University of Glasgow in 1751. He later shifted to a similar position at Edinburgh, and there, at the age of 63, he was appointed Professor of the Practice of Medicine.

In this post he achieved wide fame as a dynamic and lucid teacher. The extent of his influence in medicine is generally acknowledged; less recognized is his relationship to psychiatric thought. His theories

in this field influenced such outstanding psychiatrists as Thomas Arnold and William Pargeter in England, Vincenzo Chiarugi in Italy, and Philippe Pinel, who translated one of his works for publication, in France. Nor was his influence confined to Europe; Benjamin Rush, "the father of American psychiatry," was among his students and he incorporated many of Cullen's concepts into his own medical and psychiatric thought.

An understanding of the core of Cullen's psychiatric thought can be attained by investigating and clarifying his concepts concerning one type of mental illness, mania. In his nosography Cullen divided his general category of neurosis, or nervous disease, into four orders: comata, adynamiae, spasmae, and vesaniae. Mania (and melancholia) fell into this last group, which Cullen defined as disorders of intellectual function, and therefore of judgment. The

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distinguishing characteristics of mania were "violent anger, . . . furious violence, . . . impetuous will, . . . false judgment, . . . mistaken opinion, . . . raving, . . . unusual force in all voluntary emotions, . . . insensibility or resistance of the force of all impressions, and particularly a resistance of the power of sleep, of cold, and even hunger."

Basic to Cullen's psychiatric thought were his neurophysiological theories. In Cullen's system, the brain (which was not completely dependent on stimuli for its action) was an active organ producing a hypothetical nervous fluid which was the final product of certain constituents of the blood. Fundamentally, the amount of nervous fluid in the body determined the amount of nervous energy available, and the amount of nervous energy in turn ultimately determined the health and disease states of the body. Cullen thought that the amount of energy was dependent not only on nervous fluid, but also on the state of the brain fibers and on more general factors such as the age of the individual, his hereditary background, and the state of his physical and mental health. The condition of the nervous fluid (a newer term for a concept closely akin to Galen's "animal spirits") was obviously dependent on the state of the circulatory system; it was also dependent on the state of the organs, since, in Cullen's concept of "sympathy," the brain could affect, or be affected by, certain organs of the body (primarily the stomach, the genitals, and the uterus).

Cullen strove to discard the concepts of the ancients and to modernize medical theory. For this reason, although he acknowledged his debt to the chemical and mechanistic concepts of Herman Boerhaave (1668-1738), he condemned Boerhaave for his neglect of the nervous system. Cullen's approach to medical theory was largely physiological and mechanistic, but he too strayed from the path of pure mechanism when, in discussing the relationship between the brain and the mind, he was forced to bring in the immaterial intercession of God. He rebuked Friedrich Hoffmann (1660-1742) also, because, although Hoffmann had stressed the significance of the nervous system, he had not accorded it its rightful pre-eminence in his system, to

the exclusion of the ancient humoral theories. Cullen himself, however, retained some traces of ancient doctrine: he adopted some of Hoffmann's concept of spasmodic tension versus atony, which was only a modification of the ancient methodistic doctrine of *strictum et laxum* of Asclepiades.

Also relevant to understanding Cullen's physiology is an awareness of his acceptance of the Greek concept of *vis conservatrix et medicatrix naturae*. By this term he meant the tendency of the body to resist any untoward change, specifically, to resist any increase or decrease in the store of nervous energy. In this doctrine Cullen approached the concept of animism of Georg Ernst Stahl (1660-1734), but he rejected Stahl because his concepts were immaterial; Cullen felt that this phenomenon was a purely physical force, dependent on physical laws.

The causes of mania were various but primarily physiological. Cullen believed that an organic lesion of the brain could interfere with brain energy, and cited Morgagni's assertion that post mortem examinations revealed brain damage in maniacs. In cases where no lesions were found Cullen suggested that certain "morbid" changes might have taken place which passed unnoticed by the dissector. Irritations of the peripheral nervous system as well as such emotions as anger could increase the total nervous excitement and therefore lead to mania. Other factors affecting the course and outcome of mania were related to Cullen's concepts of temperament, which were ancient in origin. According to Cullen, the form of mania affecting persons of a "sanguine" temperament was much less serious and more amenable to treatment than the form striking persons of a "melancholic" temperament. Unfortunately, Cullen observed, mania occurred more frequently in persons of the latter disposition.

In all cases, however, the general measures taken to treat insanity were directed at (a) removing the physical and emotional causes of the nervous excitement, and (b) lessening the excitement already present. In accord with this scheme Cullen recommended that violent maniacal persons be subject to complete restraint and confinement. Both to calm the patient and to fa-

cilitate further therapy, Cullen suggested that a strait waistcoat be used as a restraining device, and that confinement take place in a dark, quiet room away from all familiar objects and acquaintances. This latter precaution was intended to preclude any strong emotional reaction to familiar objects, since such a reaction would serve only to increase the excitement and to complicate the course of the disease.

Since fullness of the blood vessels contributed to the general nervous excitement and since this excitement could produce insanity, evacuation of the body fluids was an important therapeutic instrument. Consequently, Cullen recommended blood-letting, purging, vomiting, and blistering. Shaving the head, applying cold to it, and throwing the patient suddenly into a cold bath were also thought helpful. Another method of restricting the amount of energy available to the system was to feed the patient a non-nourishing diet. Drugs, especially opium, could also be effective in limiting nervous energy by calming the excitement in the central nervous system. (Opium was considered a two-edged therapeutic sword, however, because it also acted as a stimulant to the circulation, increasing the amount of energy available to the central nervous system and consequently in-

creasing the excitement. So Cullen felt it was safe to use only when the excess excitement arose primarily in the nervous system.)

What seems to us now as some of Cullen's harshest treatment resulted from his theory that fear reduces the amount of nervous excitement. According to this thinking, awe and fear were essential in the treatment of insanity even if "stripes and blows" were necessary to produce this emotional state in the patient. Cullen did recognize that there was a thin line between instilling fear in a patient and simply punishing him without reason, and recommended that blows be used only when necessary and only under the discretion of someone who could be trusted.

Non-medical treatment played a small part in Cullen's approach to the maniac. He felt that hard and constant labor could be useful since it would divert the mind from its injurious train of thought. For this same reason he suggested extended journeys and other means of distracting the maniac's attention.

Thus, in building a theory on medical hypotheses, Cullen provided the rationale for the strong and vigorous treatment which to our contemporary minds seems primitive and brutal.

COMMENTS

DR. JOHN CONOLLY'S CROONIAN LECTURES 1849

Dr. C. R. Birnie, Physician Superintendent to St. Bernard's Hospital, Southall, has made a fine contribution to World Mental Health Year by having reprinted in book form the Croonian Lectures delivered by Dr. Conolly before the Royal College of Physicians, London, on some of the forms of insanity and their treatment.

These lectures were delivered in 1849; they appeared in the *Lancet* in October and November of that year and also in a small privately printed edition. The latter is now virtually unobtainable. Even as early as 1859, Dr. Lockhart Robertson complained in the *Journal of Mental Science* that these lectures in their separately published form "are hardly now to be had." Dr. Robertson added that they "contain in the most perfect English a long way the best description of the several forms of insanity in our language."

Dr. Conolly, who gained world wide fame for his humane treatment of mental patients, is perhaps best remembered for having abolished all forms of mechanical restraint. He was appointed Resident Physician to Hanwell Asylum June 1, 1839. "After 20th September of the same year," Dr. Birnie reports in his informative preface to the 1960 edition of the Croonian Lectures, "there was never an instrument of restraint used—John Conolly had swept them all away." It was true the humanitarian movement was already under way and non-restraint had been practised both in England and France, but Conolly "was the

first to abolish such restraint entirely and on such an extensive scale in a public asylum, and it was a cardinal principle with him that it should never, in any circumstances, be employed. His fervor and enthusiasm were such and his written and spoken word so powerful, that, during his twelve years at Hanwell, a revolution was effected in the treatment of the insane in Britain. Hanwell acquired an international reputation and visitors to the asylum came from far and wide."

Dr. Birnie gives an interesting sketch of the life of John Conolly. For four years he was professor of the practice of medicine at University College, London. Two other items are of special note. He had practised several years at Stratford-on-Avon and "was active in organizing successful opposition to the proposed removal thence of Shakespeare's remains." He was also associated with Sir Charles Hastings in founding the medical society which became the British Medical Association. Sir Charles has told the fascinating story of the birth and career of the B.M.A. and the B.M.J. in a recent volume.

Concerning the new reform presently under way in Britain, Superintendent Birnie aptly remarks that in one respect the removal of "environmental restraint" (locked ward-doors) is a logical extension of Conolly's own non-restraint system.

The present 85-page reprint of the Croonian Lectures contains an excellent portrait of John Conolly, M.D., D.C.L. (1794-1866).

CORRESPONDENCE

EGO

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY :

SIR : I must confess I was grieved to discover this evening in an accepted American textbook of psychiatry, in the space of one paragraph, four references to "the ego" as "it." I think it unfortunate that so human a trait as "the ego" should be saddled with so mechanistic a pronoun as "it." I would like to suggest three other—and I think, better—solutions.

In the first place we might say "the ego, he . . ." This imparts a certain human quality, possibly with a Teutonic flavor, suggesting masterfulness, power and also pride. It certainly seems more positive than "it."

Should that not strike our fancy, we might say, "the ego, she." Ships are so designated, and with affection. Based on current con-

cepts of the importance of early mother-child relationships, the feminine gender may, in fact, be more accurate, not to mention a certain nostalgia of affection and warmth.

A last resort would be to abandon the idea that "the ego" was either "he," "she," "it"—or even "they." That might lead to the realization that ego is not a "thing" but a manner of designating certain psychological processes. We might even get into the habit, instead of saying "the ego," of saying "ego functions" or "ego processes." Perhaps this is too much to hope for, and, if so, the "he" or "she" would seem preferable to the "it."

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TWO EARLY REPORTS ON THE EFFECTS OF SENSORY DEPRIVATION

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY :

SIR : The recent publication of 3 reviews (1, 2, 3) and 2 research studies (4, 5) will suffice to attest to the significance of the effects of the reduction of sensory stimulation upon physical and physiological, psychiatric and psychological variables: several additional experimental reports may be found in the April, 1960, issue of this *Journal*. Studies of psychiatric disturbances following cataract extraction (6) and hearing loss (7) also appear relevant to this problem. Neither the reviews nor any of the research studies which I have examined note the following reports published shortly after the turn of the century.

Clouston (8) in a chapter entitled "Rarer and Less Important Clinical Varieties of Mental Disturbance" summarizes his experience with individuals who became blind or deaf by noting that

It seems as if they were so cut off from social intercourse and the outer world by their deafness that their subjective experiences became objective realities to them. In the case of all men the senses correct many "delusions, and the impressions from the senses streaming in on the mental areas from the outer world are the best preservatives of mental health" (p. 666-667).

Although it is difficult to evaluate the relative effects of sensory deprivation *per se*, as opposed to the psychological effects of the loss of vision or hearing, the conclusion Clouston reaches is quite sophisticated.

An article by Bolton (9) is also surprising in this regard. Bolton reports on 10 cases of "dementia following sense deprivation" (6 male, 4 female) whose deprivation was either congenital or acquired and included hearing, vision or both. He discusses the difficulties in psychological development attendant upon sensory deficit and empha-

sizes the role of language and perceptual processes. Bolton summarizes as follows :

In persons who acquire sense-deprivation later in life, the mental stress involved on the one hand in the sense-disability, and on the other in the more or less unsuccessful attempts to revive the related memories which tend to pass more and more into the permanently sub-conscious, or to replace the absence of these memories by the integration of percepts and concepts on an unusual sensory-memorial basis, often, or perhaps invariably, results in the development of irritability, or depression, or general emotional instability.

In this case we see that the author is aware of the possible confounding effects of the loss of a sense modality over and above the secondary, sensory deprivation, effects.

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THEN AND NOW AND THEN

The philosophies of one age have become the absurdities of the next, and the foolishness of yesterday has become the wisdom of tomorrow.

OSLER

Zu schauen wie vor uns
Ein weis ser Mann gedacht,
Und wie wir's dann zuletzt
So herrlich weit gebracht

—GOETHE

NEWS AND NOTES

THE TITUS HARRIS SOCIETY.—The department of neurology and psychiatry of the medical centre of the University of Texas was established in 1926, with Dr. Harris, assistant professor of medicine, as head. In 1930 his department was certified by the American Board of Psychiatry and Neurology as a graduate training centre, and since that date he has supervised the training of 164 psychiatrists.

These men constitute the newly-founded Titus Harris Society, nearly 150 of whom gathered in Galveston for the first reunion and scientific meeting of the society, September 17, 1960. An all-day scientific session was followed by a dinner at the Galveston hotel honouring Dr. and Mrs. Harris.

Dr. Abe Hauser of Houston, Dr. Harris' first graduate and president of the society, stated that annual meetings are to be held in various Texas cities.

THE PARACELSUS MEDAL.—At the XIVth General Assembly of the World Medical Association and 63rd Deutsche Aerztetag convening in West Berlin Sept. 16, 1960 three doctors were awarded the Paracelsus Medal.

This award was established in 1952 as the highest honour bestowed by the Deutsche Aerztetag (German Physicians Day) in recognition of highly important contributions to medical science and service.

The physicians so honoured were: Dr. Curt Emmerich of Baden-Baden for the memorial he established to the reputation of the medical profession in his book *The Invisible Flag* wherein he demonstrated that doctors everywhere throughout the ages, under the obligation of the Hippocratic oath, have worked to protect life and reduce human suffering. This book has been published in 8 languages.

Dr. Walter Stoeckel of Berlin, Professor of obstetrics, gynecology and urology, for his great contributions to medical science, practice and literature. When during the war, which overtook him in his advancing years, he endured the trials resulting from the destruction of his clinic, he devoted him-

self faithfully to the principles of duty and labored for the safety and welfare of his patients.

Dr. Louis H. Bauer of New York City, Secretary General of the World Medical Association, in recognition of his services to the medical profession of the world, in upholding the freedom and honour of the profession in scientific, social, and economic relations; and particularly for his valuable work in the administration of the global organization of the doctors of the world and his friendship toward the German physicians.

REISS-DAVIS CLINIC FOR CHILD GUIDANCE (LOS ANGELES).—The Clinic will hold its seventh annual Institute of Child Psychiatry on November 12, 1960, at the Ambassador Hotel, Los Angeles, California. This meeting is offered to pediatricians and general practitioners in the Southern California area. Program this year will have Dr. Fritz Redl, President Elect of the American Orthopsychiatric Association, as guest speaker. Theme of the meeting will be "The Hyperactive Child."

For further information write to the Reiss-Davis Clinic for Child Guidance, Rocco L. Motto, M.D., Director, 715 North Fairfax Avenue, Los Angeles 46, California.

U. S. PUBLIC HEALTH COURSES IN EMERGENCY SERVICE.—Four national courses to train medical and health personnel for emergency services will be held during the current fiscal year by the U. S. Public Health Service and the Office of Civil and Defense Mobilization.

All courses cover basic civil defense concepts, current information on biological, chemical, and radiological warfare, and community disaster planning. Emergency services training includes the setup and operation of a Civil Defense Emergency Hospital, treatment of water to make it safe for use, decontamination of food and milk, mass casualty care, and medical self-help. Faculty will be comprised of governmental and

nongovernmental experts in the respective fields.

Tuition and housing and approximately one-half the necessary travel expenses can be provided without cost to students.

Further information on training courses and other Health Mobilization activities may be obtained from State Health Departments or Civil Defense Offices, or from Regional Offices of either the Department of Health, Education and Welfare or Office of Civil and Defense Mobilization.

ARMED FORCES FORENSIC SCIENCES SYMPOSIUM.—The second Forensic Sciences Symposium, to discuss problems of mutual interest to medical, legal and law enforcement officers in the Armed Forces, other governmental agencies and the civilian community, will be conducted at the Armed Forces Institute of Pathology, Washington, D. C., November 8-10, 1960. The symposium will be composed of lectures, panels, and demonstrations of the scientific methods used in criminal investigations.

Among the topics included are "Fingerprints and Footprints," "The Role of the Armed Forces in Criminal Investigations," "Forensic Pathology Cases," "Instrumental Deception Detection," "Psychiatry and the Law," "Rape and Sex Offenses," "Drug Addiction," "Toxicology," "Firearms Identification and Wound Ballistics," and "Court Testimony and Presentation of Evidence."

A limited number of spaces for civilians are available, and interested civilian physicians, lawyers and law enforcement personnel should submit requests for attendance to: The Director, Armed Forces Institute of Pathology, Washington 25, D. C.

UNIVERSITY OF CALIFORNIA SYMPOSIUM, "CONTROL OF THE MIND."—Some of the most distinguished international scientists and scholars will take part in a 3-day symposium on "Control of the Mind" January 28-30, 1961 at the University of California Medical Center in San Francisco.

Presented by the U. C. Medical Center and University Extension through the financial assistance of the Schering Foundation, the program will feature a broad interdisciplinary approach, surveying "the fac-

tors in the control of the mind and how they interact with each other."

Topics included: psychopharmacology, psychologic, sociologic, and historical factors, religion, mass communication, political philosophy, and other related subjects.

Further information and application for enrollment may be obtained from the Department of Continuing Education in Medicine, University of California Medical Center, San Francisco 22, California.

A NATIONAL CENTER FOR HEALTH STATISTICS.—This center has been established in the U. S. Public Health Service to bring together the major PHS activities concerned with measurement of the health status of the Nation and identification of significant associations between characteristics of the population and health-related problems.

Initially it has two Divisions: the U. S. National Health Survey, and the National Office of Vital Statistics. It will supplement but not supplant the statistical work associated with particular Public Health Service programs, and which will continue as integral parts of those programs.

Dr. Forrest E. Linder, who has been Director of the National Health Survey since its inception in 1956, is Acting Director of the new unit.

The Center will have a staff unit for statistical programming, for data processing expertise, to encourage maximum use of improved techniques in health statistics collection and analysis, and to make technical assistance available to other workers in this field.

Another staff unit, for health trends analysis, will analyse and interpret health and vital statistics from a variety of sources.

WINTER SEMINAR IN GENERAL SEMANTICS.—The 23rd winter intensive seminar will be held in the Barbizon-Plaza Hotel in New York City, Dec. 27, 1960-Jan. 1st, 1961. O. R. Bontrager, Ph.D., a former student of Count Korzybski, will conduct the seminar.

Enrollment limited to 25. Tuition \$100.00.

Information may be obtained from the Institute of General Semantics, Lakeville, Connecticut.

UNIVERSITY OF PITTSBURGH REHABILITATION TRAINING.—A new Rehabilitation Counselor Training Program at the University of Pittsburgh has been authorized by the U. S. Office of Vocational Rehabilitation. Candidates accepted in January, April, and September of any year. Stipends range from \$1,800 to \$3,400; for information write to Dr. L. Leon Reid, Dept. of Special Education and Rehabilitation, University of Pittsburgh, Pittsburgh 13, Pa.

SALMON LECTURES.—The annual Thomas William Salmon Lectures, the preeminent American psychiatric lectureship, will be delivered on Monday, December 5, at the New York Academy of Medicine, 2 East 103rd Street, New York, at 4:30 P.M. and 8:30 P.M.

The 1960 lecturer will be Harry F. Harlow, Ph.D., Research Professor at the Uni-

versity of Wisconsin since 1930. During the war Dr. Harlow was on leave from the University of Wisconsin to serve as Chief Psychologist for the U. S. Army.

Much of Dr. Harlow's work in the past 30 years has dealt with the behavior of rhesus monkeys. He has analyzed the nature and development of their learning and in the Salmon Lectures he will discuss first "The Affection of the Infant for the Mother," and in the evening he will discuss "Affection Between Infants and Adolescents."

The Salmon Lectureship, established in 1932, is under the aegis of the Salmon Committee on Psychiatry and Mental Hygiene. The committee is appointed by the Council of the New York Academy of Medicine. The lectures, for the advancement of psychiatry and mental hygiene, are designed as permanent contributions to the field of medicine and will be published later in book form.

"WHAT IS TRUTH?"

If fifty million people say a foolish thing, it is still a foolish thing.

—ANATOLE FRANCE

AND SENECA

He can die who complains of misery; we are in the power of no calamity while death is in our own.

—SIR THOMAS BROWNE

BOOK REVIEWS

ADOLESCENT AGGRESSION. A STUDY OF THE INFLUENCE OF CHILD-TRAINING PRACTICES AND FAMILY INTERRELATIONSHIPS. By **Albert Bandura and Richard H. Walters.** (New York: Ronald Press, 1959, pp. 473. \$7.50.)

This is a study by two psychologists of the origins of aggression in adolescents. The data were obtained from interviews with 52 adolescent boys and their parents. Twenty-six were "aggressive boys." Most of them were secured through the county probation service; the others from the guidance department of the school. Some of them were in custody at the time of the study, the rest were on probation. A few had been in correctional institutions. Their ages ranged from 14 to 17.

A control group of 26 was selected as being "neither markedly aggressive nor markedly withdrawn." They were matched with the aggressive boys with respect to age, intelligence, father's occupation and area of residence. In addition to the interviews each boy was given a "thematic deviation test" composed of 10 pictures indicating aggressive situations and a "story completion test" composed of 8 stories.

The bulk of the book consists of abstracts of material obtained and of statistical evaluations. A main finding relates to the importance of the "dependency conflict" and "dependency anxiety" as it relates to aggression. An overall view of the characteristics of aggressive boys is presented, stressing such attributes as open antagonism to authority, a feeling of being rejected by parents, affection for their mothers coupled with resentment against their fathers and confusion of sex and aggression.

The book contains a number of instructive comments. It lays great emphasis on any disruption of the father-son relationship. The authors explain the neglect of this in the literature by the fact that the mother is usually "the more accessible parent." They offer valid criticism of the too schematic distinction between psychopathic and neurotic delinquents. They point out that the phenomenon of recidivism, for example, is assumed to indicate in neurotic children severe feelings of guilt; in those called psychopathic, on the other hand, the same phenomenon is apt to be regarded as evidence of an inability to form just such feelings of guilt.

As a whole, this book is of great importance

because it so well illustrates a trend in behavior research which is currently fashionable and subsidized by foundations. Despite its appearance to the contrary, this trend is essentially unscientific, furnishes results that are invalid, and is socially evasive. Since in this respect this book is typical, a few of its shortcomings should be at least briefly mentioned.

The authors speak of "interviews of a semi-structured type." This is nothing but the much used and abused questionnaire method which is so different from—in fact practically the opposite of—a clinical psychiatric examination. The ratings were done by undergraduate psychology students. They were based on rating scales which again give the impression of scientific accuracy but which are subjective and unlikelike abstractions. For example, this scale is used as a "measure" of the extent to which parents encourage their sons to seek help from them: 1) not at all permissive; 2) slightly permissive; 3) parents expect boy to work out things for himself; 4) generally permissive; 5) entirely permissive. Such primitive categorical classifications inevitably vitiate statistics based on them.

The entire approach is essentially unclinical. Explanations and interpretations are not enough unless there is a clinical organization of the material. *Aggression* is a term used generally and in this book with considerable ambiguity. In the development of Freud's thought it played a great role, being regarded originally as sadism, a part of sexuality. Later it was used by Freud interchangeably with destruction. Now it often serves as a cover word for different phenomena. The authors say that they specifically avoid the term *delinquency*. Their material, however, consists of delinquents. By the term "anti-social aggression" the authors mean "injury to persons or property." They make frequent reference to anger, hostility, combativeness, "undersocialized aggressiveness," "violent aggression," etc. All of these attributes may be manifestations of very different psychological processes.

The word *guilt* is used as if it meant *feeling of guilt*. One is an objective fact, the other subjective. Both are important, but they are not the same thing.

A monotype standard of personalities is assumed. The idea of comparing a control group in such an intricate field is dubious. The differences in family situations, in social and

economic status, *etc.* may be so decisive that no statistical refinement can overcome the errors contained in the data.

There is an inherent assumption that all data excluded are irrelevant. What appear as concrete statistical results are really statements based on an arbitrary reduction of factors and arbitrary sampling. Clinical judgment should come first, and statistics afterwards, not the other way around.

The authors make the basic assumption that by their method the possible influence of "sociological factors was reduced or eliminated from the start." Thus they exclude the sociological dimension which is so important for any understanding of either adolescence or aggression (however defined).

The shortcomings of this book form a typical pattern. Some day a foundation should finance research to find out why foundations finance this type of research.

FREDRIC WERTHAM, M.D.,
New York, N. Y.

PSYCHIATRISCHE UND NERVENKLINIK. By Kurt Kolle. (Stuttgart: Georg Thieme Verlag, pp. 252, 1959.)

Following the example of Kraepelin whose second successor in the chair of psychiatry at the University of Munich the author is, Kolle describes the case histories of 187 psychiatric and neurological patients as they were presented and discussed in his clinical lectures to undergraduate students. As he states in the preface, his main intention in writing his book was a didactic one. However, the commentaries which accompany the individual case presentations have a high scientific standard. The nosological system followed in these lectures is that of Kraepelin. Phenomenological psychopathology as represented by Jaspers and his teachings is closely interwoven. Another aim of Kolle's book is to promote neuropsychiatry and its central position in medicine. The individual cases covering the whole field of psychiatry are described in a vivid and lucid fashion. Each lecture is introduced by a short quotation from Goethe's writings whose great admirer and diligent student the author has been all his life.

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WHY MARRIAGES GO WRONG. By James H. S. Bossard and Eleanor Stoker Boll. (New York: The Ronald Press Company, 1958, pp. 224. \$3.50.)

In an easily readable volume the authors discuss certain of the social factors which con-

tribute to unsuccessful marriages. They describe in an astute and entertaining manner how the individuals of diverse cultural, economic, and religious backgrounds may marry due to the American emphasis on romance and individualism. They emphasize that our high divorce rate is a result of a conflict due to these rapidly changing cultural elements.

The content of an otherwise thoughtful book is marred by a dismissal of psychiatric thought on the subject. They claim that the psychiatrist takes into consideration only the individuals in marriage without regard to sociological variables. A review of current psychiatric literature would indicate that their criticism is an unjust one.

For the reader who already has knowledge of personality factors affecting marriage relationships this book will increase his understanding of some of the current broader social factors which also lead to marriage failure.

WILLIAM H. WAINWRIGHT, M.D.,
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PHARMACOLOGY IN MEDICINE. Edited by V. A. Drill. (New York: McGraw-Hill Book Co., Inc., Blakiston Division, 1958, pp. 1243. \$19.50.)

This textbook of pharmacology is one of the best I have read. It is impossible to review in detail the excellent discussion of pharmacological theory and practise for a journal of psychiatry. I have therefore given particular attention to the sections which are more interesting to the eclectic psychiatrist. Dr. Drill has chosen a most competent group (86) of scientists including 24 who are not professors of pharmacology, to cover the subject. It is divided into 19 sections containing 88 chapters.

There are a couple of statements with which one could quarrel. McIntyre in chapter 12 states "the use of curare in ECT has been considerably reduced." To the contrary, many psychiatric units routinely use modified ECT to the degree that there was recently a lawsuit in England by a patient who had received unmodified ECT against his psychiatrist for having not used some curare-like substance. Secondly, in chapter 16 entitled "The Alcohols," it is said "the chronic alcoholic . . . is distressed and upset without the euphoria produced by alcohol in his system." I do not find euphoria in the alcoholics I have treated. They continue to drink very often because of the great distress they experience when sober.

In chapter 25, W. C. Wescol in reviewing the autonomic nervous system reports that epinephrine is oxidized to a quinone adrenoxine. Adrenoxine was postulated as an oxidation product of epinephrine but has never been crystallized. On the other hand, adrenochrome is a well known quinone derived from epinephrine and can now be easily synthesized as stable crystals. Drill (chapter 65), in his discussion of lipid metabolism does not refer to nicotinic acid which provides the most practical way of lowering cholesterol levels in humans according to numerous authors publishing since early 1955.

These are, however, minor criticisms and are more than compensated for by the great value of this work. I was particularly impressed by chapter 24 "Drugs Affecting Behavior" by P. B. Dews, not only because such an account appears in a textbook of pharmacology but because of its excellence. The material is treated in a logical way by starting with a discussion of the parasympathetic system and its mediator acetylcholine, then the sympathetic nervous system and 3 amines, norepinephrine, epinephrine and isopropyl norepinephrine. Finally there is a discussion of serotonin which can modify brain function but has no proven physiological relationship. The assumption behind this chapter is that a knowledge of these chemical moderators will be helpful in the consideration of psychotomimetic drugs like LSD and mescaline. Finally drugs used by psychiatry are divided into psychomotor stimulants such as cocaine, amphetamine, pipradol, *etc.*, tranquilizers such as chlorpromazine, and the Rauwolfia drugs and milder compounds such as meprobamate and azacylanol. These compounds have developed so quickly many of the new ones used today are not listed.

Chapter 19 on "Drug Addiction" by M. H. Seevers is particularly well done. Dr. Seevers is disturbed by the irrational way in which society deals with the problem. "It has surrounded the addict with an aura of mystery and assigned him to the criminal class. A medical problem has been turned over to the criminologist. The very laws designed to prevent the situation assure its perpetuation by creating bootleggers and peddlers. The individual is not an addict because he is a criminal—he is a criminal because he is an addict." Alcohol, by far the most addicting drug of all, qualitatively and quantitatively by any acceptable definition of the term is accepted by society. According to Seevers (and this opinion is shared by many authors who have studied the problem) mescaline, the most

active alkaloid psychologically in Peyote, is not an addicting drug. No peyotist has ever applied or been admitted to the U. S. Public Health Service Hospital at Lexington. (Peyote can be used in Canada only by medical prescription.)

This book should be easily available to psychiatrists, for no matter what their orientation, they are using drugs more and more and they will be better therapists when they know something of the biochemistry and pharmacology of their compounds.

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Saskatoon, Canada

THE FAMILY IN CONTEMPORARY SOCIETY. The Eastern States Health Education Conference. Edited by *Iago Galdston, M.D.* (New York: International Universities Press, Inc., 1958, pp. 147. \$3.00.)

The 9 papers in this volume were presented in 1957 in a conference on the family sponsored by the New York Academy of Medicine. The purpose: to bring together workers on "practical" problems of the family-oriented health education and investigators of "theoretical" problems of the family. However, the published volume gives little hint of how such studies may be of value to health educators. The two papers dealing directly with health education practices appear, in relation to the rest of the volume, to be floating unmoored in a foreign sea.

Most of the papers, however, are of considerable interest for psychiatrists and behavioral scientists. Marvin Opler presents an admirable, concise but information packed, review of anthropological studies of cultural variation in the form of families. This paper joins well with a discussion by John Spiegel of his comparative study of Irish-Catholic and Protestant old American families in the Boston area. Spiegel notes that subcultural variations in family patterns make it impossible to describe a *standard* pattern of family life in the United States. He develops the view that the homeostatic mechanisms of stability within the family, and their relative breakdown in "sick" families, must be defined in terms of the particular subcultural pattern of the family.

Nathan Ackerman describes vividly a picture of the white middle-class urban American family and its especial emotional vulnerabilities. He regards the contemporary, "peculiar disharmony of the individual's relations with urban society" as tending to throw each in-

dividual back upon his family group for reassurance as to his loveliness and worth, into a compensatory and often maladaptive family "togetherness." Other papers of psychiatric interest include a preliminary report by William Westley of a study of the families of emotionally healthy adolescents and a review by Paul Glick of the great variety of changing socioeconomic characteristics of American families.

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DAS ZENTRAL-NERVENSYSTEM ALS SYMBOL DES ERLEBENS. (The Central Nervous System as a Symbol of the Modes of Experiencing.)
By F. S. Rothschild. (Basel, New York : S. Karger, 1958, pp. 142. sfr. 27.)

Communication through symbolization is an elementary capacity of life and not of man alone. To the degree to which a living organism expresses itself through symbolism and, through this symbolic communication, is able to become aware of itself in time and space, it not only lives (biologically) but also experiences (psychologically). The German "Leben" refers to the vital or bodily aspects of life, whereas "Erleben" expresses the psychic-spiritual (seelisch-geistig) aspects. "Erleben" roughly describes what we ordinarily call psychic; it results through the translation of the "vital layer" via symbolizations.

In paraphrasing the author, his central thesis is this: The role of the central nervous system is to make "Erleben" from merely "Leben" possible and it does so by way of symbol production and by being symbolic in its very structure. On this structure, both micro- and macroscopic, depends what kind of "Erleben" the organism will be capable of. Animal life has in the course of evolution developed symbolic structures, through the aid of which it can become aware of itself and is able to relate to itself. "Leben" understands itself through "Erleben." This "Erleben" is structure-bound; it depends upon a specific organization or configuration of the excitations in the CNS. These excitations can be understood and interpreted by the living organism because of their symbolic nature. The structure of these excitations in the CNS (with their dimensions in time and space) constitute the symbolic medium through which the structures of reality (with their dimensions in time and space) are interpreted.

The author reviews and discusses current concepts and solutions to the body-mind prob-

lem and the hypotheses in regard to the function of the brain. He feels that earlier animistic and mechanistic approaches can be overcome by looking at the brain structure and function as a symbol-system. His theory provides a new way of looking at the body-mind problem, avoiding both the artificial dichotomies and the logical pitfalls inherent in the monistic views. He marshals his facts in a clear, scholarly fashion. He is a phenomenologist *par excellence* and the breadth of his knowledge is neuroanatomy, neurophysiology and comparative biology is impressive; his interpretations of the symbolic aspects of structure and function of the CNS ingenious. Unfortunately none of these can be discussed in brief and it is hardly possible to exemplify here the author's methodology.

This book is not for the clinician, it is for the theoretician among psychiatrists, neurologists, neurophysiologists. It is particularly refreshing to have a primarily biocentric approach to the body-mind problem instead of the age old tortuous logocentric approaches. Whether the author has really accomplished the development of a unified theory of body and mind with the avoidance of all logical pitfalls is for future research to tell. In any case his is an important contribution to the basic sciences of psychiatry and neurology and the book deserves an English translation.

PAUL H. ORNSTEIN, M.D.,
College of Medicine,
University of Cincinnati.

THE PSYCHODYNAMICS OF FAMILY LIFE; DIAGNOSIS AND TREATMENT OF FAMILY RELATIONSHIPS. By Nathan W. Ackerman, M.D.
(New York: Basic Books Inc., 1958, pp. 379. \$6.75.)

This book is by one of the pioneers of the integrated family approach to mental disorder. The first and the last sections entitled, "Theoretical Aspects" and "Wider Perspectives" respectively appear to this reader the most important parts of the book because the author permits himself here to present more clearly his own views on the treatment possibilities and research methods in this complicated field.

The main parts of the book, devoted to the clinical aspects of family diagnosis and treatment, are more uneven and difficult to follow because of the changing focus and levels of abstraction. Thus the reader is led from a chapter concerned with the assessment of the disturbed child within the family setting to a discussion of disturbances in parental care and then back to problems of adolescents

which in turn is followed by a small chapter on psychosomatic illness and family disturbance. While all these chapters are worth while in themselves and illustrate the author's wide range of clinical experience and interest, they do not hang together too well for the reader, and it is difficult to remain oriented with regard to the different techniques or clinical settings in which the material was obtained.

There is a core of 50 families which have been studied by the author and his collaborators, but it is not clear to what extent individual chapters are concerned with the entire sample, or parts of it or, possibly, patients outside this group. Much of this material had been previously published and the effort to weld these different presentations into a continuum is not entirely successful. All the same, the book is a most important and welcome publication for everybody concerned with family treatment and research.

STEPHEN FLECK, M.D.
New Haven, Conn.

CONCEPTUAL AND METHODOLOGICAL PROBLEMS IN PSYCHOANALYSIS. Edited by *Leopold Bellak, M.D.* (Monograph from Annals of the New York Academy of Sciences, Vol. 76, Art. 4, pp. 971-1134. \$2.75.)

Dr. Bellak has compiled 5 papers and discussion held under the auspices of the New York Academy of Sciences in 1959. The first 3 are concerned with the Libido theory. Thomas Szasz takes issue with what he thinks are some of the implications to be derived from Freud's "Three Contributions to the Theory of Sex." Among these implications, according to Szasz, are that it (a) opens the way to the creation of a diversity of different instincts and drives, (b) makes human sexual behavior dependent upon anatomical and physiological factors in such a way as to leave little room for the understanding of the psychic contribution to that behavior, (c) suffers from an implicit moral view as to what constitutes normality, and (d) that Freud did not understand the role of object-relationship of the ego.

Dr. Alfred Stanton's "Propositions Concerning Object Choices" is the second contribution in which he summarizes 9 statements about object choices and discusses some of the difficulties we have with refinement of terms. These terms, it seems, cannot be refined as far as we would wish without further productive research. But this does not mean they cannot serve us. It need no longer be assumed that a concept to be useful must be "defined"

in terms of the operations used to measure it, and it certainly need not be observable; it needs only to be related by some kind of theoretical construction to something that is observable. The concluding paper in this group is Pumpian-Mindlin's: *Propositions Concerning Energetic-Economic Aspects of Libido Theory: Conceptual Models of Psychic Energy and Structure in Psychoanalysis.*

The two papers: "The Unconscious" by Bellak, and "The Structural Model" by Ostov conclude this monograph.

The constantly recurring theme and problems raised in these papers and more particularly in the discussions are the mutual interaction of empirical data on theory, and theory or conceptual models on observation. To keep these constantly in mind is no simple task for presenter, reviewer or reader. "What one may discover through a microscope and what is the nature of the microscope are two different areas of investigation" Ekstein is quick to point out in his lucid discussions of two of the papers.

The monograph cannot be viewed in a way which can indicate adequately the rich content of the papers and their discussion. I would not even say they can be "read" with ease but those who will "study" them cannot help emerging from the effort the better for their labor.

EDWARD C. ADAMS, M.D.,
Berkeley, Calif.

THE SAGE OF SEX. A LIFE OF HAVELock ELLIS.
By *Arthur Calder-Marshall.* (New York: G. P. Putnam's Sons, pp. 292, illus., 1959. \$5.00.)

The publication of this book in 1959 marked the centenary of the birth of Havelock Ellis. The author had spent some two years "in exploring and reliving this long and puzzling life." Ellis had died at 80.

Of the several biographies of Ellis in existence this is the fullest and most satisfactory as a straightforward account from birth to death, with some data as to family background and considerable material relating to the various persons, male and female, who had filled significant places in Ellis's life.

He had been given the name of Henry Havelock, the hero of the Indian Mutiny, who was a relative on his mother's side; but dropped the Henry and was henceforth known as Havelock Ellis.

Calder-Marshall was greatly assisted in writing this book by Mme. Françoise Delisle who, in 1917, a young French woman estranged

from her husband and wrought upon by the evil circumstances of World War I and by difficulties of livelihood too, had come to Havelock Ellis for help. She knew he had helped others in distress and he had invited her to come. That meeting seemed to them both like the intervention of a kind providence. Françoise fell in love with the patriarch with the spreading snowy beard and the flowing mane and he with her. Two decades and more they spent together. They were the happiest years in both their lives. This period is well documented in Mme. Delisle's memorial volume *Friendship's Odyssey*, from which as well as from Ellis' autobiography *My Life* and from many conferences with Mme. Delisle the author of the present work draws freely. (The name Delisle will be recognized as an anagram for D'Ellis.)

Havelock Ellis' literary range was vast, 37 of his books on many subjects, were published during his lifetime, and several, including *My Life*, posthumously. *The Dance of Life* (1923) he particularly valued as best setting forth his "philosophical outlook on life." This book had a surprising and unique experience; it became a best seller and went through many editions. His fame rests largely however on his *Studies in the Psychology of Sex* (7 volumes). The first volume in this series (on Inversion) was brought out in England and resulted in a lawsuit with Ellis and the publisher as defendants for producing a "filthy" book. The series was published in Germany and later in the United States.

In his discussions with Mme. Delisle, Calder-Marshall records that there was one point of disagreement—*re* religion. He declares that he, the author, is a Christian and Françoise seemed to think he was trying to read Christianity into Havelock's teaching. "One thing I will not tolerate" she said, "is that you should try to pretend that Havelock was a Christian." In *My Life* Ellis records that in his 'teens he went through a religious phase not uncommon in adolescence. But he was an omnivorous reader and "it was in the course of my reading that I slid almost imperceptibly off the foundation of Christian belief." Françoise, who was with him to the end, knew that he didn't get back on.

The marriage arrangements of Havelock Ellis and Edith Lees were perhaps unique in the records of this function. Though married, they were to maintain their separate existences, privacy and financial responsibility. Edith paid one-half of the cost of the wedding ring. They were to live in separate abodes, visiting each other only occasionally. They were married in the Registry Office. "Then," Havelock records,

"we each returned to our bachelor homes."

Ellis' absorbing interest in sex problems dated from adolescence when he became concerned about the question of his own virility. In marriage he condoned his wife's various Lesbian attachments knowing that as a sex partner he was not a very satisfactory husband.

In addition to inversion Mrs. Ellis was of a cyclothymic constitution. She was forever busy, often to the point of exhaustion. She gave lectures at home and in the United States and was overjoyed by the attention she received. There were also periods of deep dejection, sometimes with abrupt transitions, and there were two or three suicidal attempts. Toward the end of her life her agitation became more severe and the need of hospital treatment had to be considered. Fearing that her husband might have her committed as a mental patient she insisted on a legal separation. Such an instrument was actually drawn up and husband and wife signed it before witnesses. Then they went out and had lunch together. It was not intended that the legal action would make the slightest difference in their manner of living; but it gave assurance to the wife that her husband now had no power to place her in an institution.

Mrs. Ellis died in 1916 and was cremated. Havelock and two friends witnessed the consummation. "As I gazed at that beautiful sight, at that vast and seemingly liquid mass of golden intense heat . . . my pain . . . was merged into joy at the glory of the vision . . . that one whose spirit in life . . . had been a flame, should pass from the world in actual flame, a chariot of fire, to rise with the air, and to become one with the panorama of sky and sea. . . ."

At this time Havelock Ellis considered that he was an old man. The study and writings to which he had dedicated his life had been done. He felt that death might be near. In a sense the old life was finished. But unexpectedly, the following year, a new life began, for the first time a complete life, with that remarkable person Françoise Delisle—a *Wahlverwandschaft*, if ever such there was—and it lasted twenty-three years.

He had attained to a state of mind that one commentator spoke of as a "cathedral calm," despite the inner tensions that through so many years had painfully beset him.

At the close of his book Calder-Marshall wrote: "Havelock Ellis anticipated no survival after his death except in the hearts of those who loved him. This was not because he disliked the idea of life after death, but because he found it scientifically inconceivable."

The author gracefully dedicated his book to Françoise Delisle, the woman who helped him make it.

C. B. F.

PSYCHOHYGIENISCHE VORLESUNGEN. EINE EINFUEHRUNG IN THEORIE UND PRAXIS DES SEELISCHEN GESUNDHEITSSCHUTZES. (Lectures on Mental Hygiene. An Introduction into Theory and Practice of the Preservation of Mental Health.) Edited by *Heinrich Meng*. (Basel and Stuttgart: Benno Schwabe & Co., 447 pp., 1958.)

✱ This is a collection of 40 lectures discussing ever so many facets of mental hygiene. The editor, Heinrich Meng, is emeritus professor of mental hygiene at the University Basel (Switzerland). Ordinarily, editors compose the introduction and the finale of such books. In this instance Dr. Meng did not only this, but contributed 14 lectures of his own, reaching from historical remarks via the mental hygiene of the pubescent and grown-up to that of the bodily damaged patient. Kallmann—New York wrote on Genetics, Eugenics and Mental Hygiene; Stengel—Sheffield on attempt at suicide and its relationships to suicide. Mental hygiene in Public Health is presented by Brockington—Manchester. Riggensbach—Préfargier reports about mental hygiene in the Swiss army. A theologian, professor van Oyen—Basel, took over the fortieth lecture on religion and mental hygiene. With the jurist (meantime deceased) Reiwald—Genf, the editor, in addition to all his already mentioned pieces, discussed the prophylaxis of crime. Dr. Meng was the leading mental hygienist in Switzerland during his active years with the university. This volume is, in fact, a monument to him, his ideals and achievements.

EUGEN KAHN,
Houston, Tex.

PSYCHOLOGY AS APPLIED TO NURSING. By *Andrew McGhie*. (Edinburgh and London: E. and S. Livingstone Ltd., 1959, pp. 238. \$4.50.)

This book is addressed primarily to student nurses, although the author hopes it will be useful to all nurses.

It is written in 4 parts; The Development of Personality, Human Motivation, Interaction with the Environment and Social Groups. Part

I is the longest and most detailed section of the book. Personality development is discussed through childhood, adolescence, adulthood and old age. In the chapter on childhood the normal psychological characteristics are first described, and at greatest length, as the basis for understanding human behavior; this is followed by a discussion of certain psychological disorders of childhood, and finally a consideration of the child in hospital. The same approach is used for the other chronological periods. Chapter II, Adolescence, is particularly valuable, both because it has, we believe, had less attention in the teaching of nurses than childhood and old age are now receiving, and because the student nurse is herself a late adolescent.

Part III, which is a discussion of learning and thinking, is valuable not only for its content but because this aspect of psychology also has received comparatively little attention in psychology courses in the nursing curriculum, which have tended to be centered almost entirely on the emotions.

The author questions certain current assumptions for which he feels there is very incomplete evidence, and gives his reasons. For instance, on the question of keeping the baby in the nursery except at the time of feeding, he says that since the child cannot form a permanent relationship with the mother in the first 6 months, separation in a nursery is unlikely to have "any effect on the newborn infant who probably is content to leave the anxiety to the psychologist." Rigid insistence on breast-feeding in all cases is also questioned.

It may surprise many nurses to read that their uniform is seen by the author as one of the causes of fear in the child entering the hospital for the first time.

The style is simple and clear, but the material is not over-simplified. The summaries and the questions at the end of each chapter are valuable. In conclusion the author states his hope that his readers will not "passively accept every statement without further thought." This is a warning which is needed by nurses.

This book is a very useful over-all view of the subject, which will not only be helpful immediately to the nurse but which should also lead to further study.

NETTIE FIDLER, R.N.,
School of Nursing,
Univ. of Toronto

IN MEMORIAM

PETER JACOB FROSTIG, M.D.

1896-1959

Dr. Peter Frostig died of coronary occlusion in Los Angeles on October 21, 1959, at the age of 63. He occupied a prominent position in psychiatry in California; his contributions are known to many psychiatrists throughout the world.

Dr. Frostig was born in Belz, Poland, on March 25, 1896. He received his medical degree at the University of Vienna in 1921. Art criticism, psychology and philosophy were among his early interests. His postgraduate training in psychiatry and neurology was obtained under the guidance of Wagner Jauregg and in close association with Schilder, Gerstman and Economo. His classmate Otto Fenichel gave him a brief didactic analysis. Afterward Dr. Frostig himself practiced psycho-analysis for some years, during which he enjoyed the personal friendship of Alfred Adler.

From 1924 to 1932 he practiced psychiatry in Lwow, Poland, and began his research career there. He was superintendent and medical director of the Psychiatric Institute, "Zofioka," Warsaw, Poland, from 1932 to 1938. During his administration the Institute affiliated with the Medical School, and the government commissioned him to write a Polish textbook of psychiatry under rather unusual conditions. For four months of each of four successive years he visited and worked at psychiatric centers in Europe, gathering material for the book, which appeared in two volumes in 1932. In this way he came in contact with Kraepelin and Bumke in Munich; Bonhoeffer, Birnbaum, C. and O. Vogt in Berlin; M. Minkowski and Eugene Bleuler in Zurich. In Marburg he worked under Kretschmer, and was close to Eugene Minkowski in Paris.

While in Poland, Dr. Frostig published a number of papers in Polish and a monograph in German on "Das Schizophrenie Denken," based on studies in the phenomenological school of Husserl. He had a stand-

ing invitation to present clinical seminars (in which he excelled) at the University of Vienna, where he also published research studies. In 1936 Prof. Otto Poetzl, successor to Wagner Jauregg, suggested that Dr. Frostig start an experimental series to parallel that of Sakel on the effect of large doses of insulin in schizophrenia. He standardized insulin shock therapy on 1,000 cases of schizophrenia. The report was published in Polish, German and French and translated by Dr. Joseph Wortis for the *American Journal of Psychiatry* and *Archives of Neurology and Psychiatry*. This standardization has been widely accepted.

In June, 1938 he was invited to this country to present his data and the techniques of insulin shock treatment at the Harlem Valley State Hospital, where he met Dr. Harold Himwich. Dr. Frostig had made a beautiful analysis of the behavioral changes of insulin hypoglycemia and noted that the symptoms did not come in a haphazard way but were associated in a series of syndromes. Then he and Dr. Himwich found that the syndromes had relation to the decrease in CMR, some coming with a relatively small fall and others only with a profound decrease in CMR. To test this hypothesis they gave smaller or larger amounts of glucose so that they could arouse patients from greater depression of CMR to higher levels. They noted that the symptoms changed from those associated with the more profound depression to those with smaller decreases of CMR and vice versa, for after they had metabolized the small amount of glucose administered, CMR would fall again and more profound levels of CMR were again associated with the signs noted in deeper hypoglycemia. These results were published in 2 papers.

While Dr. Frostig was Dr. Himwich's guest, the latter received an invitation from Tom Douglas Spies to study brain metabolism in patients with pellagra and Dr. Fros-

tig was one of the group to go down to Birmingham. The work there resulted in at least 2 publications, one with Tom Spies and Dr. Himwich on CMR and the other chiefly on the clinical side with Tom Spies alone.

Dr. Frostig was offered a research position by Dr. Langley Porter, Dean of the Medical School at the University of California. This was as a result of Dr. Aaron J. Rosanoff's invitation to introduce insulin treatment in the California State Hospital system.

The premature death of Dr. Rosanoff and the outbreak of World War II interfered with the plan to modernize the treatment of acute mental disorders. This was already under way at Camarillo, Patton and Stockton State Hospitals. During this period in California, Dr. Frostig wrote a monograph which summarized the results of his research in insulin shock treatment. Although accepted for publication on behalf of the University of California by Doctors Bowman and Rosanoff, and later recommended to Dr. Nolan D. C. Lewis and the Masonic Fund by Dr. Adolf Meyer, the monograph was never published. Rising printing costs and a lessening of interest in insulin coma therapy were regrettable circumstances.

In 1945, Dr. Frostig spent a year in New York in order to obtain a medical license. He returned to Patton State Hospital in 1946. Unable to resume his prewar program, he resigned in 1947 to engage in private practice in Los Angeles. Here he exerted an important influence on his colleagues as a recognized scholar and teacher.

He was on the staff of the Cedars of Lebanon Hospital, taught at the College of Medical Evangelists, and was consultant in the Department of Psychology at the University of Southern California.

He leaves behind his wife, Marianne Frostig, Ph.D. in educational psychology; a daughter, Mrs. Anna Marie Miller, and a son, Thomas.

Dr. Frostig was a source of inspiration to many psychiatric colleagues in California. He acquainted us with the rich heritage of European psychiatry. Since he was a personal friend of several world leaders in psychiatry, his scientific discussions were often enlivened by delightful anecdotes about these individuals and their work. He was a kind and dedicated person, a student of the first order, but unfortunately World War II interrupted his most productive scientific activities. In this country he pioneered as one of the discoverers of electro-narcosis therapy and was considered a foremost authority and researcher in insulin shock therapy.

The foregoing factual summary of Dr. Frostig's scientific and professional contributions does not reflect adequately the warm sympathetic insightful and keen human being. To his students, patients and friends, he was always a source of great inspiration and called forth from them deep affection and loyalty. Those who knew him intimately miss him as a generous friend, a gifted healer, a stimulating colleague and a broad-visioned humanitarian.

Eugene Ziskind, M.D.,
Esther Somerfield-Ziskind, M.D.

PSYCHIATRIC AND MEDICOLEGAL IMPLICATIONS OF GENETIC AND ENDOCRINOLOGIC RESEARCH IN SEX DETERMINATION¹

KARL M. BOWMAN, M.D., BERNICE ENGLE, M.A., AND
MARJORIE MERGENER, A.B.²

In the last 3 years we have had a breakthrough in genetics and in sex determination which has greatly affected our understanding of and ways of treating a number of psychiatric conditions. This new knowledge of the human chromosomes has revolutionized some of our thinking. Until 3 years ago biologists thought that the human being had 48 chromosomes, but we now know that man has only 46(1). These chromosomes can be identified and counted only when the cell is dividing into two daughter cells. The ovum and sperm by processes of division lose one half of the 46 chromosomes and thus have only 23 (haploid). The other body cells have 46 chromosomes in the form of 23 pairs (diploid). In the ovum the 23rd chromosome is always an X chromosome; in the sperm cell it is an X half the time, a Y the other half. If the sperm cell has an X chromosome and combines with a normal ovum the resulting individual will be a normal female and the 23rd pair of chromosomes in each cell will be XX. Conversely a Y chromosome in the male will result in a normal male with an XY pair of chromosomes in each cell(2).

The fact that the sex of the newborn child is normally determined by the father and not by the mother is important to us as psychiatrists because the common misunderstanding has resulted in many women being blamed for bearing only girls. In some cases separation and divorce have resulted and in other cases women have developed severe depressions.

The problem of determining the sex of the newborn child is quite easy in the vast

majority of cases but in a few cases differentiation is not easy and mistakes are made. Certain basic concepts are necessary in understanding this whole problem. In the first place no individual is completely masculine or feminine. Anatomically, physiologically and psychologically every individual has elements of both sexes. The normal testicle secretes estrogen (the so-called female hormone) and in the normal female the adrenal cortex secretes androgen (the so-called male hormone). The developing embryo remains sexually undifferentiated for about 48 days. Primary sex differentiation, as determined by the genetic sex, develops between the 48th and 57th days. From one primitive gonad, either the cortex will develop into an ovary while the medulla (center) will regress; or the medulla into testes, and the cortex regresses. Of the two ducts of the embryo, Wolff's duct develops into the male sperm duct, and Muller's regresses in the male; and Muller's duct develops into the fallopian tubes, uterus and upper vagina in the female, while Wolff's duct regresses. At about 60 days the external genitals are recognizably differentiated; and hormones are known to influence their development(3).

We thus see that the normal individual develops the sexual organs of his own sex and suppresses the development of the sexual organs of the opposite sex, although the residues of these undeveloped parts still remain in his body. Ordinarily all this is determined by the genetic factors we have mentioned and the characteristics of the 23rd chromosome in the sperm cell.

However, a number of things may happen to prevent his normal development as a clear-cut male or female. On a genetic basis the individual may have more of the attributes of both sexes. Even if there is no hereditary cause, several conditions in the

¹ Read at the 116th annual meeting of The American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

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mother may adversely affect the development of the fetus including the sex development, for example, hormonal tumors; German measles, particularly during the first 3 months of pregnancy; exposure to x-ray; and hormonal treatment. The genetic sex of the individual is determined at conception, but factors may occur either before or after birth which modify the sexual development. Attempts therefore have been made to determine the genetic sex of the individual (3).

One test considered reliable within its limitations is the sex chromatin test. The most common way of performing this test is to make a buccal or vaginal smear, stain these cells and study them under the microscope. A stained mass of chromatin is clearly visible in up to 70% of the nuclei of normal female cells. This has been called chromatin-positive or female chromatin pattern. The chromatin mass is present in less than 6% of normal male nuclei and has been called chromatin-negative or male chromatin pattern. It was held that the chromatin-positive reaction indicated the presence of 2 X chromosomes and that the chromatin-negative indicated a lack of 2 X chromosomes (4). Recently this viewpoint has been abandoned and Barr, in a letter in the November 13, 1959, issue of *Science* states, "The precise relationship between the sex chromatin and chromosomes is an unsolved problem that challenges the resources of cytologists." Since in some writings *chromatin* studies are equated with *chromosome* studies, it is important to emphasize that these are two entirely different studies and that there is not the clear-cut relationship between the two tests which was thought to exist.

The final criterion is the actual viewing of the chromosomes. This test is a most difficult one and can only be done by comparatively few persons who have had a great deal of experience in this work. The cells in bone marrow or skin culture are arrested and held in a phase of mitotic division and are so treated as to allow each chromosome to be distinguished and the pairs to be identified. The normal individual will show 23 pairs of chromosomes; the last pair, the sex chromosomes, will distinguish the sex.

An XX pair normally characterizes a female and XY, a male (5).

We now know that a number of variations in numbers and types of the chromosomes may occur with profound effects on the individual. The following table indicates possible variations of the sex chromosomes and the conditions that will result:

POSSIBLE VARIATIONS OF SEX CHROMOSOMES (23RD PAIR)

BOTH CHROMOSOMES NORMAL

1. X-X Normal Female
2. X-Y Normal Male

MALE CHROMOSOME ABNORMAL

3. X-XY Klinefelter Syndrome
4. X-O Turner Syndrome

FEMALE CHROMOSOME ABNORMAL

5. XX-X Metafemale
6. XX-Y (Same as 3.)
7. O-X (Same as 4.)
8. O-Y No Case Known

BOTH CHROMOSOMES ABNORMAL

9. XX-XY No Case Known
10. XX-O Normal Female
11. O-XY Normal Male
12. O-O Probably Inviabile and Early Abortion

We have listed 12 possible variations in the combinations of sex chromosomes and attempted to predict the results. Three of these have never been reported: numbers 8, 9 and 12. Some workers recently claimed that the sex chromosomes can be identified as coming from the male or from the female. We have accordingly drawn up these possible 12 combinations showing the female sex chromosome (or chromosomes) on the left and the male chromosome (or chromosomes) on the right. It will be noted that numbers 6 and 7 derived from abnormal female chromosomes yield the same final combination as do numbers 3 and 4 derived from abnormal male chromosomes. We will be interested to find out whether a process of differentiation between the female and male sex chromosomes will show that these conditions actually occur and whether this may even explain the fact that we do not always get the same chromatin pattern in all cases of Klinefelter's and in all cases of Turner's syndromes.

We have written to Dr. C. E. Ford of

England regarding these 12 different combinations and raising the question of two abnormal gametes combining; and referring to the mention by Hungerford, *et al.* of the possibility of an XXXY genotype (September 1959 issue of the *American Journal of Human Genetics*). Dr. Ford was also asked if he would care to speculate as to the likelihood that homosexuals, transvestites and complete sex inverters might belong to any of these abnormal groups. Dr. Ford was kind enough to answer our letter as follows :

COPY

MEDICAL RESEARCH COUNCIL

RADIO BIOLOGICAL RESEARCH UNIT

Harwell,

Didcot, Berks.

23rd November, 1959

Dear Dr. Bowman :

Thank you for your letter of November 12th. The XXX female type has now been identified. Only one case has been found as yet and this was reported in a recent issue of the *Lancet* (September 26th.) by Jacobs and her colleagues at Edinburgh.

You are quite right regarding the possible occurrence of the 4 additional forms : I did not mention them because their expected incidence would be so low. Actually the XXO and XYO types should become normal female and male respectively. The OO type I would confidently expect to be inviable and to lead to early abortion. On the other hand the XXXY type might well be viable although, of course, very infrequent indeed. If it *did* occur it would be a most interesting case indeed from the point of view of sex chromosome balance.

As you will read in the account of the XXX case the patient had no striking abnormality and it occurs to me that there may well be many more such cases at large in the general population. After all, if XX eggs fertilised by Y sperm make any considerable contribution to the incidence of Klinefelter's syndrome (chromatin positive)—the evidence of Nowakowsky and his colleagues suggests that they do—there should be an almost equal number of XX eggs fertilised by X sperm to give XXX individuals. As to the likelihood of the XXX cases or the anticipated very rare XXXY cases behaving as homosexuals or transvestites I do not think that present evidence provides sufficient basis for offering an opinion.

I fear that what I have said in this letter may not be of very much value but if you

wish to quote anything I have said by all means do so.

Yours sincerely,

s/ C. E. Ford

We now understand a number of conditions and can treat them effectively. Two conditions have been regarded as sex transformations : Klinefelter's and Turner's syndromes. Klinefelter's syndrome is that of a sterile male usually with some degree of gynecomastia and with small testes. In most cases he can have erections, ejaculations and a normal sex life. Some are eunuchoidal males ; a minority also have gynecomastia. A number of these patients have been discovered only because they sought medical advice about infertility. Many patients with Klinefelter's syndrome were thought to be genetic females who had been transformed into imperfect males. This was due to the fact that this group (contributing about two-thirds of the cases of Klinefelter's syndrome) had a positive chromatin pattern (incorrectly called "female chromatin pattern"). The study of chromosomes has, however, cleared this up. These cases have 47 chromosomes, the 23rd pair has an additional X so that the combination is XXY(6). Klinefelter's syndrome therefore is no longer considered a case of sex reversal from a female into an imperfect male, but as a condition in which a male has developed imperfectly because of a chromosomal abnormality. It is associated with other congenital anomalies, of which mental retardation and renal abnormalities are the most common.

Two cases of chromatin-positive Klinefelter's syndrome with characteristic symptoms were reported in identical male twins with 9 normal siblings(7). At age 15 both boys, eunuchoid in appearance, failed to develop male secondary sex characteristics and Twin A's breasts began to enlarge. Testicular biopsy on Twin A, who had had nocturnal emissions, showed some spermatogenic activity; none had occurred in Twin B. The first twin underwent plastic surgery on his enlarged breasts, preceded and followed by testosterone therapy. He showed no interest in girls and his "behavior impressed several observers as effeminate." Twin B's personality pattern "revealed anxiety and fear associated with an awakening sexuality."

Turner's syndrome is the reverse of this. The syndrome is usually characterized by failure of the ovaries and of secondary sex characteristics to develop and other congenital anomalies including shortness of stature and webbing of the neck. Some variations in the symptoms have been seen. Breast development, spontaneous menstruation and ovarian development have been reported(8). Girls with this condition, as far as known, are always sterile. About 80% of these cases are chromatin-negative and this led to the concept that they were males changed into imperfect females. We now know that the condition is often associated with a lack of the Y chromosome so that in this group the individual has only a single X chromosome and it is represented as XO instead of the diploid XX which the ordinary female has. According to Ford and co-workers "she is a female with an abnormal genotype."

An atypical case of chromatin-negative Turner's syndrome was followed at the University of California Hospital for over 10 years. Though her parents and 2 sisters were normal, the girl, born in 1945, had a rudimentary uterus, atrophic ovarian tissue, a webbed neck and other stigmata of Turner's syndrome. At age 12 some pubic hair appeared but at age 15 her appearance was still that of an extremely short, sexually immature girl. Pituitary growth hormone to encourage maximum growth was given and estrogen therapy planned. The pediatrician frequently consulted the parents about the patient. When the patient was 13 she and her mother were seen individually for 6 hours of psychotherapy by the University of California pediatric mental health unit over a 6-week period. While at first described as somewhat antisocial, belligerent and sensitive about her size, she expressed her desire during the therapy to be a bride and a mother, or a nurse or nun. After psychotherapy the patient was described as apparently happy and socializing well.

We conclude, therefore, that legally a patient with Klinefelter's syndrome is a male and that it is psychologically important for him to consider himself a male and for those about him to do so. Treatment may consist of bilateral simple mastectomy best performed by a skilled plastic surgeon and, if eunuchoidism is present, administra-

tion of androgens. A patient with Turner's syndrome is legally a female and it is likewise important for the patient and others to consider her a female. Turner's syndrome may be treated by the cyclic administration of estrogens to stimulate the growth of female secondary sex characteristics and to produce some uterine bleeding. A few patients have menstruated spontaneously. A psychiatric evaluation should be done in all cases and psychiatric treatment is frequently indicated. A legal consideration might be the question of annulment or divorce if the individual knew at the time of marriage that he or she was sterile.

Another interesting condition is the meta-female(9), sometimes called superfemale, which is associated with an XXX set of sex chromosomes so that the individual has a total of 47 chromosomes. Only one case has been reported to date(10), a 35-year-old woman sexually underdeveloped who stopped menstruating at the age of 19. She had infantile external genitals, underdeveloped breasts, and a high (71%) proportion of chromatin-positive cells. She was of below normal intelligence.

A possible variation would be the individual born by parthenogenesis, or virgin birth. It is recognized that this can occur in other mammals, fatherless rabbits having been experimentally produced (Pincus)(11). It does not appear inherently impossible in man. If such a condition did occur there would possibly be a haploid nuclear structure with only a single set of chromosomes, including only a single X chromosome. Such an individual would be female in apparent sex and would presumably be sterile. It would be possible to determine such an individual by two tests: only blood groups derived solely from their mothers would be found and a skin graft from the daughter to mother should survive. Attempts have been made, particularly in Great Britain, to find such haploid individuals but careful examinations have always indicated that the cases under study were not the result of parthenogenesis (Platt, Stratton)(12). However, Pincus points out that parthenogenesis in rats with production of haploid offspring, does not result in any viable progeny. All his rabbits that survived had diploid nuclear structure.

He concludes from this: "Evidently the formation of a double set of chromosomes is essential to produce even an approximation of normal parthenogenetic development."

Although cases of eunuchoidism are usually correctly identified as to sex, it seems that a brief discussion of this condition should be given. A whole group of individuals, both male and female, are imperfectly developed sexually and at puberty fail to develop the normal secondary attributes of their own sex. One of the most frequent causes is a failure of the pituitary gland to secrete the sex stimulating hormones. Another is failure of the gonads to function normally. The condition occurs occasionally in families but in some cases it is not known whether the defect was of the gonads or of the pituitary gland. Biben and Gordan (13), however, report 5 instances of eunuchoidism of pituitary origin in two families in which sex hormone treatment successfully produced genital development. Some boys with undescended or partially undescended testicles may respond quite fully to endocrine treatment and their testicles will then descend. In eunuchoid males the penis is commonly very small. Many of these boys show marked disproportionate growth in their long bones (arms and legs). Eunuchoid girls are likewise tall and usually continue to grow beyond the normal age. In the girls the uterus fails to mature and at puberty other sex characteristics do not develop. Again, the appropriate sex hormones bring about normal maturation in almost all cases.

While the cause in most cases of sexual precocity is unknown, congenital adrenal hyperplasia, the same genetic defect which produces female pseudohermaphroditism, often produces premature sex development in boys. Hypothalamic tumors produce this condition in both sexes and other known causes are tumors of the ovary in girls or tumors of the testis, adrenal cortex or the pineal in boys. It can start as early as 2 years and develop rapidly, with puberty attained before age 9 or 10.

These children offer various medicolegal difficulties. The sexually precocious boy may be kept out of school because parents fear to have their children associate with him. The sexually precocious girl may be-

come pregnant at a very early age, like the Peruvian (14) girl, who began menstruating at 8 months and at 5½ years gave birth by Caesarean section to a 6-pound boy.

A fraternal twin boy, with a normal sister, was hospitalized at the University of California Hospital and at Langley Porter Neuropsychiatric Institute intermittently over a 3-year period because of his sexual precocity, for which no cause was found. Sexual development began at one year; by age 8½ he was sexually mature and his bone and hormonal ages were well into adolescence. Though his IQ was substantially below normal, the psychologist emphasized that his retardation could be a result of his earlier enforced isolation, when his mother, under neighborhood pressure, fenced him in a 4' x 10' yard. The public school refused to keep him because of his boisterousness, and his mother was unable to handle him without his father, who had left the home. At that time the patient was hospitalized 6 months at Sonoma State Hospital for observation and transferred to Langley Porter Neuropsychiatric Institute for treatment.

The boy, a lively, boisterous and sometimes destructive child, improved in his relationships with the doctors and other personnel, probably the result of psychotherapy. Even at the hospital, however, he was sometimes treated more like an adolescent than a boy age 6½. After 3 months his mother decided to take the patient home and at the latest report he was attending school apparently with success.

These children, though they may look like adolescents, are still children to be treated as such; usually they are not over-sexed, but merely prematurely developed. By puberty their growth will have stopped so that by age 18 they are actually shorter than most boys and girls of their age. If these children are handled intelligently during the period of precocity, they should become normal, though short, adults.

Mistaken identification of the infant's sex may occur commonly in pseudohermaphroditism and in true hermaphroditism. Female pseudohermaphrodites have ovaries, with some male characteristics. The female complex of chromosomes is apparently normal; but an excessive secretion of androgens, most commonly from the overdeveloped fetal adrenal cortex before birth,

is one factor in causing the male characteristics.

In adrenal cortex overdevelopment, caused by a recessive gene, according to Crumbach and Wilkins (15), the infant may or may not be recognized at birth as a female. As virilism progresses, the clitoris enlarges to resemble a penis, body hair appears early, and at puberty a beard grows and the voice deepens, but breasts and menses do not develop. Crew (16) cites evidence to strongly suggest that 1 in every 400 males is "in fact a completely masculinized female."

With the discovery of cortisone in 1950, which suppresses the excessive secretion of androgen by the adrenal cortex, the individual treated in the early stages can develop into an essentially normal female and virilism is thus prevented. Normal pregnancies in women with congenital virilizing adrenal hyperplasia who were treated with cortisone have been reported. There is no theoretical reason why such pregnancies cannot occur in these women if their condition is treated.

A female pseudohermaphrodite with adrenal hyperplasia raised as a boy was followed at the University of California Hospital. The child, born in 1946, appeared essentially female except for a large clitoris which continued to enlarge and vulva which grew to resemble a scrotum. Her parents decided to raise her as a male and the necessary surgery was performed. By age 8 the child's breasts had begun to develop, 3 or 4 episodes of vaginal bleeding had occurred and the kidneys had become inflamed several times. A panhysterectomy was performed after consultation with the parents, who still wanted to raise the child as a male. In 1957 the child was described as a feminine-like boy of slender build. A year later the whole family was seen by the pediatric mental health unit for a course of psychotherapy; in 1959 the child was described by the father as "all boy." His doctor noted at that time that he was dating and was interested quite normally in girls.

Lisser and Escamilla (17) reported the case of a boyish-looking muscular child with abundant pubic hair and thick, protruding phallus (really an enlarged clitoris), first seen at the University of California at age 3. At birth, because of the confusion about sex assignment, the child had been registered as a male. The cell chromatin pattern was positive; an ex-

ploratory operation showed a normal-appearing uterus, tubes, ovaries and a rudimentary vagina. The parents then decided to raise the child as a girl and changed the masculine name to a feminine one. Cortisone therapy was begun and surgical construction of a functioning vagina was planned. At last report, efforts to legally change her name were being made.

Rosenwald, *et al.* (18) administered psychological tests before and after clitoridec-tomy, to 5 female pseudohermaphrodites, one of whom had been raised as a boy, up to the time of surgery. None of the children showed significant psychopathology before or after surgery, including the child whose sex was changed. In this case both the mother and the child had been seen in psychotherapy and the family unit appeared to be stable.

Male pseudohermaphrodites have female characteristics in varying degrees, from a small phallus and some degree of breast development, to the extreme of appearing as a normal, though non-menstruating woman, with breasts, external female genitalia and vaginal canal (usually a pouch), but often with sperm ducts. The excessive secretion of estrogen by the testes in the abdominal cavity or in a hernial sac causes feminine development. The high familial incidence of this condition suggests a genetically determined disorder. Because of the danger of malignancy the testes should be removed.

Goldberg and Maxwell (19) reported probably the best-known case of testicular feminization which occurred in a healthy, apparently normal girl of 19 years who came to the University of California Hospital complaining of amenorrhea. The girl had abnormally long arms and legs, conspicuously large breasts, small, though normally formed, external genitals, a short vaginal canal and a clitoris which was only a dimple. Sex hair was absent. She was described as an affectionate person who enjoyed the attention of men, but who had always felt herself somehow different from other girls. Since the patient planned to marry and wanted plastic surgery, exploratory surgery was performed and two gonads identified as testes were removed. Following the operation she was described as "more than ever anxious for marriage" and "cheerful, happy and full of vitality." At last report the patient had been married, divorced and remarried.

The true hermaphrodite has elements of both sexes, both testicular and ovarian functioning tissue, but not active sperm and egg cells. So far, as reported, no evidence of chromosomal imbalance has been found. Two instances of two true hermaphrodites in the family support the theory of a genetic cause. Money and coworkers(20) studied 12 cases of true hermaphroditism and found a chromatin-positive pattern in 8, a chromatin-negative in 4.

Historically, these persons were in many countries allowed to decide on their sex but must thereafter stick to their decision. The commonsense way is for the physician to consult with the parents and arrange for necessary surgical and medical measures.

True hermaphroditism in siblings apparently male was reported by Clayton, *et al.*(21). The 2 boys, age 16 and 7, had chromatin-positive cell nuclei, complete hypospadias without cryptorchidism, and the older one had normal male puberal changes except for small and insensitive testes. In the older boy a biopsy showed that the testes contained ovarian tissue; scrotal exploration and testicular biopsy on the younger child also showed ovarian tissue. Except for the congenital abnormality of his penis, which was repaired at 4 years, and a eunuchoid body build, the 17-year-old was in excellent general health and development and was said to be a psychologically well-adjusted male. The younger boy was also in good general health and showed normal growth and development. The authors concluded that the identical gonadal differentiation of the siblings proved the defect to be of genetic origin. The children had a normal 12-year-old brother and no other familial instances of abnormal sex development could be found.

All this is of great interest to psychiatrists because the finding of individuals who were conceived as members of one sex and developed into the opposite sex may offer grounds for all sorts of further study. Questions have been raised as to whether homosexuals might belong to one of the groups of intersexuality. Attempts have been made to link up the sex chromatin pattern with the sex behavior. The few studies made so far do not show, however, that male homosexuals tend to have a chromatin-positive pattern, nor do female homo-

sexuals tend to have a chromatin-negative pattern.

Some transvestites claim to have no homosexual desires and have never engaged in homosexual acts; others vary from ambisexuality to complete homosexuality. A few are commonly called cases of complete inversion or transsexualism. A study, by Barr and Hobbs(22), of 5 male genuine transvestites showed the nuclei of a typical chromatin-negative pattern, and it was therefore "inferred that these persons bear the male XY sex-chromosome complex." Two Czechoslovakian investigators, Raboch and Nedoma(23), found that 35 of 36 men with a chromatin-positive nuclear pattern had underdeveloped testicles. They then examined 9 men with underdeveloped testicles from a group of 194 homosexuals. They concluded, since 6 of the 9 had a chromatin-negative pattern, that a chromatin-positive pattern in homosexual men would be coincidental, not causal; and that testicular androgens were the prime factor affecting "the development and course of sex life . . ." Davidson and Winn(24) conclude that "chromosomal factors play little part, certainly in transvestism and homosexuality, and the nuclear sex is not at variance with the anatomical sex in the vast majority of cases . . ." They cite, in addition to the 2 sources quoted above, a study by Wiedemann.

It is also of interest that some pseudohermaphrodites have been raised as members of the unpredominant sex. Careful studies by Money, *et al.*(25) indicate that individuals over age 2 are likely to have great difficulties if attempts are made to change the sex role. In their excellent articles they point out 7 factors to be studied in deciding to which sex an individual should be assigned. These are:

1. Assigned sex and sex of rearing
2. External genital morphology
3. External accessory reproductive structures
4. Hormonal sex and secondary sexual characteristics
5. Gonadal Sex
6. Chromosomal Sex

Patients showing various combinations and permutations of these 6 sexual variables

may be appraised with respect to a 7th variable:

7. Gender role and orientation as male or female, established while growing up.

From their studies of over 100 cases they concluded that by about age 2 the individual has identified himself clearly as a member of one sex or the other, and it is usually disastrous to attempt any change after that identification has occurred. They recommend, "in the case of neonatal and very young infant hermaphrodites . . . that sex be assigned primarily, though not exclusively on the basis of the external genitals and how well they lend themselves to surgical reconstruction in conformity with assigned sex," and possible endocrine treatment.

On the other hand, Rosenwald, *et al.* (18) from their observations of sex change in a 6-year-old female pseudohermaphrodite raised as a boy and other cases followed in their clinic, stated that "under favorable circumstances change of sex can be made after the establishment of gender role without resulting in a confused patient inevitably destined to severe emotional disease." Psychological disturbances were considered not inevitable, but a result of an inherent weakness in family structure. Although reassignment of sex is inadvisable in any hermaphrodite beyond the infantile age period, female pseudohermaphrodites with adrenogenital syndrome who have been reared as boys, because of an original diagnostic error, "should be individually evaluated with regard to possible change of sex assignment."

Cappon and coworkers (26) list 6 variables of sex: genetic (chromosomal); gonadal; endocrinological; body habitus (appearance); genitals; and secondary sex characteristics. Since they emphasize the close correspondence between the psychological and the body sex, one may infer that the individual conforming to 4 of the 6 equally weighted criteria for one sex would be assigned to that gender role. This method has been much criticized.

Stoller and Rosen (27) stated that neither the somatic sex nor the early identification of the patient with one sex is all important. "The essential criterion is the strength of the patient's identification with one sex or the

other." Two British writers, Davidson and Winn (24), consider that, within certain limitations, nuclear sexing indicates the genetic and gonadal sex and is useful in assigning the individual to a suitable sex role, but often the anatomical sex and the mental outlook "are even more important factors in making a wise decision."

In our opinion, no laws should be at present enacted regarding the sex determination of pseudohermaphrodites or true hermaphrodites. In the case of a young child, the physician should decide on the basis of medical knowledge and the family's wishes; the patient himself should be consulted if old enough. It is better to leave the lawbooks uncluttered with specific statutes and to leave room for the use of medical advances and the physician's judgment.

SUMMARY AND CONCLUSION

This paper has discussed some of the latest discoveries in genetics and in endocrinology and their psychiatric significance. We now know Mongolian idiocy is due to an abnormal condition of the 19th alleles and that it may be associated with Klinefelter's syndrome. It seems likely that a whole series of psychiatric conditions will soon be linked up with disorders of the chromosomes. We realize the importance of the sex hormones. Both the androgens and estrogens are composed of numerous different substances. We do not know the potencies of each one of them nor have we adequate knowledge to correctly quantitate some of them. These are only two of many illustrations that might be given. This spectacular breakthrough is just beginning and the next 10 to 20 years will see still greater additions to our knowledge.

After this paper was presented, a basic question was raised by two articles (28, 29) in *Lancet* for July 16, 1960. The first article reported 2 cases of true hermaphroditism. "The basic diploid chromosome number in each is 46 and the sex chromosome constitution is interpreted as XX. In one patient 18.5% of cells had a chromosome count of 47. Despite the presence of a testis in one case and an ovotestis in the other, no Y chromosome was present." The second article reported one case of true hermaphroditism with 46 chromosomes and "the chromo-

somal constitution was found to be XX, indicating female sex." It cites 2 articles published a few months previously, each of which reported one case of true hermaphroditism with the sex chromosomes being XX. All this material raises a basic question as to whether the Y chromosome is necessary for the presence of a testis or an ovotestis.

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THE COMMON FRONTIERS OF PSYCHIATRY AND LAW¹

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We want to discuss those regions of personal distress and public disorganization which lie within the necessary and legitimate boundaries of both psychiatry and law and which are not yet fully explored. In the spirit of our title we will seek to identify and corral some of the common problems now ranging tantalizingly outside the borders of scientific law and social order. Later we will suggest a structure within which this initial foray may be extended in time and in legal, psychiatric and political significance.⁴

After tentative and rather slow beginnings, American universities are in the midst of rapidly expanding programs of collaborative undertakings between psychiatry and law. Mainly, these are concerned with the initiation and development of courses for the training of law students in the elements of psychiatry and behavioral science as they apply to the law. Several law schools including Yale(1), the University of Pennsylvania(2), the University of Chicago(3), Temple University(4) and other academic centers are now experimenting with teaching methods and preparing teaching material for this purpose(5). Less advanced are plans for programs of joint research. Already, however, a few research units in psychiatry and law have been organized and new ones are in prospect. Our emphasis today will be on implementation of this phase of the collaborative efforts(6).

It is our thesis that, hopeful as are the beginnings which have been made in law schools and departments of psychiatry in

our country—even in anticipation of their future contributions—no program thus far undertaken or planned is responsive to the range, significance and urgency of the problems involved. We therefore propose that this national problem, affecting as it does our most essential personal and community interests and values, must be approached on a commensurate scale.

It is appropriate, therefore, to review some of the experience we have already gained in joint ventures of this kind, and to propose a map that provides a sketch of what appear to be the lines of special promise. In so doing we shall perforce give some attention to the value assumptions and goals of the professional groups involved, and consider the proposed alternatives in the light of developing trends and projections, and of behavioral and psychiatric findings to date. We will suggest how these trends may be fused in a research institute for carefully planned and integrated long-range investigation into these common problems.

Although the range of challenging questions is enormous it is encouraging to be able to say that some collaborative work has already led to discernible results. The new intermingling of research-minded lawyers and psychiatrists is producing a common frame of reference whose potential significance for mental health as well as for community policy is far-reaching. We shall presently refer to some representative bits of research; but it would give a distorted image of these developments to lay too much stress upon present contributions.

In an earlier symposium with us, our late colleague, Professor George Dession(8, 9, 10), a pioneer in the collaboration of psychiatry and law, succinctly epitomized our common interests as being concerned with the "two areas of social process in which individuals seem to experience exceptional difficulties in the pursuit of their objectives."

The psychiatrist is rare who does not, very soon after he undertakes treatment, discover a not insignificant range of unde-

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tected illegal activity, not merely fantasied or anticipated but actually carried out by his patients, including those who come mainly from ostensibly conformist middle and upper class groups. And, indeed, only the most insensitive lawyers and counsellors remain unaware for long that legal actions undertaken by or against many of their clients are reflections of essentially psychiatric problems. These could be treated most efficiently and justly with a proper and adequate understanding of the sub-legal and sub-rational conflicting motivations expressed by them. Legal organizations may be the principal recruiting agency of psychiatric patients from the depressed socio-economic groups. In an eastern state about one quarter of the patients from the most socially and economically deprived groups who had been seen by psychiatrists had arrived there through the intervention of police or the courts. Further, the psychopathological symptomatology of this group was likely to be expressed in deviant or provocative interaction with the community (11, 12). If we thus combine the social impact of the lower class patients who act out their psychopathology so as to be caught and labelled "criminals" with our more socially favored patients whose preconscious antisocial tendencies invade the social fabric more insidiously but more effectively, the significance of this frontier of common legal-psychiatric concern becomes self-evident (13, 14).

The broad scope of research in the field of psychiatry does not need to be dwelt upon. All manifestations of mental disease are its province, and its investigation probes into the problems of individual and collective diagnosis, prognosis, and therapy and searches in particular for the factors affecting the etiology and course of the disease process. As a physician, the psychiatrist's dominant articulate value is life and health. There are, however, social demands upon him concerning which the profession is far from of one mind, or comfortable. These range from the question of the use of his knowledge for purposes of crime detection (*e.g.*, narcosis; hypnosis) (15, 16, 17), to its use for inter-nation destructive purposes, for example, psychological and biological warfare. Somewhere intermediate is the

problem of their implementation with the aim of promoting or achieving less debatable social or national political goals.

Several psychiatric projects are already engaged in gathering data about the frequency of occurrence in communities of various size and composition not only of neurotics, psychosomatic cases, and psychotics (17, 18), but also of psychopathic characters—the recidivist criminals of our culture. Psychiatrists have participated to a very limited extent up to the present in the study of the first steps that often lead to full-scale court action in juveniles and adults.

As a biologist and medical specialist, the psychiatrist was early concerned with those organic changes which might catapult an individual into psychopathology of a personally distressful or socially harmful nature. Organic causes range from feeble-mindedness on an anatomic or physiological basis to brain disease, toxicities, physical degenerative changes, and psychosomatic illness arising from predominantly psychic stimuli. Certain tentative studies would seem to indicate that there are empirically observable and measurable correlations between physical illness and social delinquency (19). Reports of those careful and able investigators, the Gluecks (20, 21), indicate a positive correlation between particular body types and incidence of juvenile delinquency. Intensive and specialized investigation into these somatosocial delinquencies would therefore appear to be one of the proper functions of the psychiatric member of a research team concerned with antisocial behavior.

Many of the conventional techniques and areas of psychiatric research lend themselves with little distortion to investigation of these compelling social psychiatric questions. For example, the wards of a mental hospital can provide rich opportunities for the investigation of power operations, loci of decision-making, and factors affecting those decisions which may have profoundly deprivational impacts. Not only learning and rewarding techniques, but also retribution, imposition of deterrents, and efforts at rehabilitation (the classical triad of criminal law) are applied daily in large mental hospitals. On the side of the

patients, this interaction involves a wide variety of character types and of symptomatic deviation. On the side of the doctors, who act as judging and decision-making figures in these hospitals, there is a comparably broad range of personalities, motives, and objectives. Stanton and Schwartz (22) Caudill *et al.* (23) and others have already made important preliminary observations; thus enough empirical data exist for the development of relevant and heuristically promising hypotheses. There are sufficient opportunities in the course of the daily hospital activities for "experimental" observations of the effect upon future behavior of decisions which implement either punitive or rewarding responses.

The focus of legal research is the community-wide process of authoritative decision. For *argumentative purposes* research has the relatively modest role of discovering precedents or "facts" likely to influence the judgment of tribunals. For *scientific purposes* the "arguments" and the "facts" become part of the phenomena to be explained. What factors account for the acceptance or rejection of proposed statutory prescriptions by the legislature or the electorate (*e.g.*, fluoridation) (24)? For the invocation or failure to invoke a provision in the formal code on the part of law enforcement officers (*e.g.*, blue laws)? For the acceptance or rejection of interpretations by administrators, courts, juries (*e.g.*, the doctrine of the *Durham* case) (26)? The effect of formal requirements upon conduct, and especially of sanctioning measures (*e.g.*, recidivism)?

Within traditional legal court and pedagogical procedures, there exists ready-made opportunity for research. For example, law schools frequently adopt a role-playing procedure as a training device which, to a remarkable degree, succeeds in integrating the factual context of an actual or hypothetical case with freedom of interpersonal interplay. Such so-called moot court cases, properly studied by qualified teams of psychiatrists, social scientists, and lawyers, may provide data to improve judgment about the most efficient way to permit the presentation to the court of the total relevant picture of personality stress and social strain. Indeed, a comparable technique is

proving its effectiveness in the University of Chicago study of small group interaction in a jury trial (27).

Experiments may be designed to explore the effectiveness of "memory" under these trial conditions and to test procedural changes in which the psychiatrist is able to communicate his best factual estimates without attempting to transmute them into terminology employed in legal doctrine.

Even these brief and inadequate reminders of the distinctive frames of research reference among psychiatrists and lawyers suffice to identify many areas of overlapping interest. On the one hand, a detailed knowledge of the formal and effective decision institutions of the community is essential if we are to uncover pertinent information about the degree in which legal arrangements increase or decrease mental disease or affect its form and content. On the other hand, psychiatric findings and methods of clinical study may be of far-reaching importance in explaining, or considering, the consequences of community decision on general issues or concrete cases.

A word on the impact of legal process upon mental health: The established practices of arrest, detention, arraignment, provision of counsel, handling of release on bail, investigation, assigning of judge, fixing of date of trial, demeanor of judge, mode of examination—to go no further—may, upon combined psychiatric and sociological inquiry, prove to be unnecessarily anxiety producing. These practices may be so disruptive of crucial family relationships, so damaging to self-esteem, and so shocking to standards of justice embodied in the super-ego, that they inflict the precipitating and necessary cause for severe and irreversible psychic damage. Within a wider community framework, if these practices are demonstrated to be relatively confusing and hence unenlightening to the reading public, demoralizing to the livelihood and competence, and disillusioning to faith in democracy, it may become clear that their deterrent effect is the reverse of that intended.

In a word, if we examine the total "value impact" of legal practices with the armory of psychiatric and behavioral instruments now available for the study of any detail-in-context, it is practicable to discover the

degree to which legal practices have positive or negative impacts upon the psychiatric health (well-being) and other values of individuals and institutions. This means that we sample how legislators, executives, administrators, the police, judges, and other officials (and official doctrines and operations) affect the emotional integrity and the total value position of others (and are themselves affected) (28).

At this point we turn more specifically to promising lines of collaborative research, hoping to amplify and modify the conceptions touched upon thus far. For convenience, we classify the proposed lines of study in 6 groups: (A) Studies of the participants in the legal process; (B) of the procedures by which legal administrative decisions are arrived at; (C) of the sanctioning and corrective methods employed by the community to accomplish its objectives; (D) of the factors that affect the degree of conformity or non-conformity to legislative policies (authoritative prescriptions) of the community; (E) of the process of struggle and agreement, especially in the world community; (F) of professional education and development.

Every individual and group that plays a role in the decision process of every community is a potential subject of investigation by the use of the hypotheses and methods of psychiatry and the social sciences, and oriented toward the principal questions pertinent to legal inquiry. We concentrate upon two groups briefly, the "recommenders" and the "invokers," in order to provide a somewhat specific picture of the possibilities (25, 29).

Not much is known about the psychological identity of persons who take the lead in demanding legislation whose primary or sanction provisions stand out, in terms of community norms, as either remarkably coercive or restrictive, or as notably "tolerant" or permissive. We are almost ignorant of the epidemiology of pressure groups and individuals who are strikingly coercive or permissive on sanctioning measures such as capital punishment, prolonged imprisonment, deportation, sterilization (and so on); and who are active in support of extreme and violent policies on such topics as school and social segregation, intermarriage among

ethnically distinct individuals, divorce, obscenity in the contents of mass media of communication, religious worship in the public schools, loyalty oaths, regulation of trade unions and business monopolies, and alcohol consumption. These questions are all controversial at various times and places in our civilization; and psychiatrists have come to realize that they may provide congenial forms of ego-syntonic role-taking as defenses against expressions of the inner tension of the mentally ill, or may be social reflections of ego-dystonic conflicts and compulsions.

It is obvious that even if these psychic realities are better studied they do not necessarily determine the social validity of the conflicting opinions themselves. Even an extreme position, or willingness to play an active agitational part in public life, does not warrant an insinuation of disease. However, it cannot be denied that the accumulation of psychiatric knowledge has often connected the *different* with the pathological. Enough miscellaneous data, amply augmented by a steady stream of innuendo, is now in circulation to justify a serious attempt to put the whole problem in balanced perspective. It may even diminish somewhat the alleged tendency, for example, to assume that whatever is not "conservative" is "crazy."

Such an enterprise is peculiarly suitable to the joint efforts of lawyers and psychiatrists. This is especially true when we study not only the "recommenders," but the "invokers" of existing statutes, doctrines and other formally authoritative prescriptions. What motivations energize public officials who are extraordinarily zealous in "carrying out the law"? What are the motives and characteristics of unofficial members of the community who formally take the initiative in alleging, whether falsely or accurately, the criminal violation of which sorts of community rules? There has already been psychiatric concern, and clinical research, directed at the so-called litigious, frequency paranoid, personality. How many of these complaints, when investigated by competent teams, would prove to have a factual basis, whether or not the complainants press them? There is also the converse problem. What are the qualities

of those considerable numbers of passive, possibly masochistic, individuals who suffer undoubtedly illegal deprivations (e.g., assaults) without invoking legal protection?

The way that judges or juries solve the problems with which they are presented depends in no small degree not only upon what comes to their conscious focus of attention during the litigation, but also the myriad preconscious stimuli which unknowingly impinge, and the unconscious (endogenous) factors to which they respond but do not attend. And not *all* that is brought into the *conscious* attention field is successfully guided by the "procedures" which bear this label in legal language. In general, there has been insufficient concern and hence knowledge about the psychological effect of the procedures which relate to the persons permitted to be present in the courtroom, or which formulate limits upon how the parties present their claims and justifications through counsel (including arguments and evidence); or which seek to determine how the final acts of deliberation and commitment are arrived at.

It is essential to realize that in terms of effect any given decision is oriented toward the *future* and toward the *community as a whole*. The immediate response of judge or jury has an immediate effect upon the total value position and especially the emotional well-being of the immediate parties. But the conspicuousness of this impact should not distract us from recognizing that all other participants are similarly affected. This is not only true of counsel for the defense and prosecution, but for the witnesses, the judge, the jury, the immediate spectators, and for the community outside the courtroom.

However, these *immediate* effects are only some of those that follow a decision outcome, and hence are presumably brought to the notice of decision makers when they allow themselves to be guided by the comprehensive value-objectives of a body politic. Relevant considerations include: 1. Longer range as well as immediate effects upon the offender; 2. Deterrent impacts upon potential deviants from prescribed norms; and 3. Impacts upon other members of the public. The problem that challenges joint research is how to bring

psychiatric knowledge to its optimum place in the pre-decision sequence.

Clinical data derived from representative psychiatric cases, supplemented by psychiatric interview and psychological projective material, need to be studied step by step in order to develop more explicit criteria for the total involvement of psychiatrists in the case from its inception. It is abundantly evident from experience to date that lawyers and psychiatrists have been insufficiently informed of the considerations that enter into their distinctive approaches. Hence very few new procedural proposals have thus far emerged. It would of course be valuable to have other disciplines represented in these case studies, notably sociologists and psychologists (30, 31, 32).

Another feature of these case studies can be the making of estimates of the *future* result of the entire range of alternatives open to the community decision makers (police, prosecutors, court, etc.) at each step of the way. This can be especially productive when teams composed of several disciplines are included, both in the investigation of past cases and in the concurrent examination of pending cases.

Some of the estimates of future alternatives will relate almost entirely to the *defendant*. What is the probability that he will repeat the same act that he is believed to have committed in the past? For example, what is the likelihood that a molester of children will turn into a rapist within the next five years if released presently without therapy of a particular kind? Or, on the contrary with therapy what are the chances that he will abstain from any sexual offense? If the assumptions made about the future are less contingent upon estimates of *present psychopathology* than upon *exposure to specific environmental circumstances*, the critical question becomes that of judging the likelihood that the defendant, if released under various conditions, will be confronted by an upsetting environment. We use the term "upsetting" only to imply that the situation will favor the occurrence of an act that violates a norm of conduct. In our capacity as scientists, it is relevant to consider another possibility, which although formally excluded from the scope of the court, is appropriate to other pub-

lic order officials. It is likely that the defendant who is performing a mild sex offense today will turn into another type of offender, a murderer, for instance, tomorrow(33)? Questions of this kind arouse the uneasiness of lawyers, since they appear to contain an element of prior judgment; they ought therefore to be considered in detail as part of the agenda of research.

We have been referring to the specific defendant before the court and the range of psychiatric testimony that can be brought to the notice of the court by procedures. Another body of psychiatric and social science investigation can relate to *potential offenders other than the defendants*. What will be the effect upon potential offenders of adopting any specific alternative in dealing with individual defendants of various categories? Deterrence is a recognized aim of public policy in these matters, and it is plausible to believe that court procedures can be adapted to the simple presentation of expert estimates of collective results.

For purposes of systematic analysis it is convenient to add a third category to be covered by estimates referring to the future. We include *all members of the public other than defendants or potential performers of a given offense*. Under various circumstances members of the public are likely to respond to court action in ways that affect public order and psychic health. Hence experts on public response may be asked to estimate the reception likely to be given a range of specified decision outcomes. For example, if the court deals with an offender in ways that are regarded as outrageously lenient by influential and active members of the public, how will this affect the treatment received by a released defendant, as well as the status of the officials and organs responsible for public order? One outcome may be a strong demand that the legislature change the criminal code in directions that restrict the individuation of the court's treatment of offenders. Here again we are touching a topic that occasions uneasiness among lawyers. No one need deny that estimates of public response probably enter into the judgment of courts. But there is reluctance to face such matters directly for fear of undermining the degree to which courts

operate independently of political factors, or are reputed so to operate. Clearly a borderline topic of this kind is peculiarly suitable for careful, long-term, joint research. Eventually it may be regarded as practical to experiment with rules of procedure that permit estimates of public response to be made by experts.

Psychiatry and the behavioral sciences have as yet contributed little to many questions of trial process, such as proof in the adversary setting, the meaning and efficacy of traditional devices like the oath, and of the validity of newer information-gathering methods such as the polygraph "lie detector," and "truth serum" drugs(34, 35, 36). Still broader inquiry is needed into the dynamic interaction of the trial participants, the accused, the judge, the contending attorneys, the public, and the mass media of communication.

A further major line of joint research relates to measures relied upon by community decision makers to cope with deviational conduct(37). It is more obvious than ever that ordinary sanctioning arrangements, when they are not purely punitive, are primarily educative. They presuppose that an individual knows enough of the appropriate culture to learn when he is confronted by a contingent threat of negative sanction, or when he is exposed to the sanction if he takes a deliberate risk and loses. The presupposition that an individual is educated or educatable, in this sense, does not apply to some categories of people. It is one of the continuing contributions of psychiatry that it is improving the criteria by which it can estimate the future conduct of individuals under specified conditions, helping thus to identify the defendant who is not at a given time amenable to the educative impact of sanctions and hence not deterrable by them. Besides the unassimilated, who have not acquired the culture in the first place, are certain categories of psychological illness and mental defect. These are not *sanction* but *corrective* problems; and the aim of corrective measures in so far as the defendant is concerned is to reconstruct the individual's mastery of himself and the culture to a level that makes it possible for him to learn from sanctioning measures. This is consonant with the psychiatric ther-

apeutic goals of re-establishing an effective function by balance of ego-superego control of psychic functions. Further research is needed to provide firmer bases for the prediction of the relative efficacy of various alternative deterring and sanctioning methods on the individual and his community. Not enough is known about the dynamics and effectiveness of retributive, deterrent, and rehabilitative techniques in response to behavior which offends the social group. Although absolutist and often contradictory assertions are reiterated in the literature of the two professions, we have little evidence concerning whether punitive sanctions deter potential malefactors. More specifically, we do not know which legal sanctions deter what kinds of individuals from committing what kinds of antisocial acts. There is, as yet, practically no body of valid information to draw upon in selecting candidates for probation and parole, or in abetting the success of those who have been selected (39). Perhaps most important is the tentative nature of our information regarding the relationship between the informal processes of social sanctioning and the formal legal procedures, especially of the reincorporation into the community of the released offender.

In modern America the psychiatrist is being called upon to play an increasingly important part in every phase of community deliberation and action. While it is common knowledge that the psychiatrist is drawn into many criminal and civil cases and is continually involved in the activities of agencies of correction and custody, it is necessary also to recognize that he is now likely to be asked to appear before administrative boards and commissions and, speaking for himself or for an association of professional colleagues, to testify before committees of the legislature at all levels of our governmental system. Properly organized research teams are in a position to explore for the first time the total impact of a given kind and magnitude of psychiatric difficulty upon conformity and non-conformity to community norms. It is possible that one result of research will be to suggest that some of the norms of conduct prescribed in community codes are unenforced and in fact may be unenforceable due to ambi-

valent community responses to them. Scientific teams may provide the factual inventory on the basis of which codes may be kept in harmony with the fundamental objectives of public order. We suspect that revisions are likely to be indicated in some of the statutes relating to sexual conduct, for instance (41). The attempt in writing criminal codes to stigmatize as "criminal" certain forms of behavior may fail because the particular sanction fails to correspond to the moral judgment of the community (42, 43). It is at least possible that psychiatric problems may be precipitated in these cases by the individual conflict which in turn is a reflection of paradoxical and inconsistent community expectations and sanction (40, 44).

In view of the urgency of world affairs, we feel a special sense of the importance of the field of international law and relations in so far as the problems connected with these difficult issues can be given factual study. Psychiatrists have traditionally fought shy of the study of factors contributing to war and crisis, to revolutionary conflict, rebellion and riot. Yet it is obvious that our professional concern for mental health goes much further than the case by case care of individuals. We do in fact explore the collective impact of various factors upon the incidence of mental difficulty. Before the last war, the physicians of The Netherlands issued a declaration concerning war as a medical problem of research and therapy. And it must be admitted that in so far as collective, no less than individual, living is responsive to unconscious factors, the psychiatrist (and psychoanalyst) is professionally involved. The crucial issue is whether we are equipped with research methods and conceptual categories capable of being fruitfully applied to the gigantic issues at stake. Our view is that we are in position to make a beginning and that exploratory research can be productively directed to certain problems. Can we aid in identifying the situation, for example, in which the rival leaderships in a community situation, or in an institution, move toward a breaking point? Published studies of such community situations would probably serve as objective reminders to leaderships everywhere of the explosion points in human

affairs, and might exercise a deterring influence upon risk-taking under hazardous conditions. At any rate, we can hope by means of joint researches to learn more about the propensities to coerce, lawfully or unlawfully, that are found in the relations among national states as well as social classes, interest groups, and individuals. We believe that whatever we can contribute, however modest, is worth the effort (45).

No plan less ambitious than a National Institute devoted to an integrated and comprehensive attack simultaneously carried out on all phases of strategic problems common to psychiatry and law is responsive to the scope of these social dilemmata (7). In later publications it is our intention to consider some of the basic desiderata for such an institution, including its structure and function, the training and disciplinary background of its chief participants.

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THE PSYCHOPHYSIOLOGIC SEQUELAE OF HEAD INJURIES^{1, 2}

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This paper is the report of an inquiry into the nature of the post-traumatic syndrome. This condition, also known as the post-concussion syndrome, occurs frequently after head injuries. It is a diagnosis made mainly by neurologists and neurosurgeons rather than by psychiatrists. The most usual symptoms are headache, dizziness, anxiety, irritability, insomnia, impairment of memory and concentration, and reduced tolerance to exertion, alcohol and heat.

The cause of the condition is not entirely clear, although it is generally believed that both physical and emotional factors contribute to it (12). Among the organic causes named are: vasomotor changes, perhaps associated with the brain stem damage (11), meningeal adhesions which produce traction on the dural sinuses (14) and effusion of cerebro-spinal fluid into the sub-dural space (10).

Emotions enter into the post-traumatic syndrome in a number of ways: 1. The head has great psychic value, and injury to it may represent an overwhelming of the ego. The headache, dizziness and other symptoms originally caused by organic damage may serve as a nucleus for a neurotic reaction (20).

2. The hope for compensation often operates unconsciously to prolong symptoms.

3. Where litigation is involved there may also be the desire for revenge, or the need for tangible proof in the form of judicial decision that one's symptoms are justified.

4. The uncertainty surrounding the post-traumatic syndrome permits the development of doubts and fears of the unknown. When the symptoms persist, the patient

often senses that what he has is not a well-defined, clearly understood condition but rather a vague one which can be variously interpreted. His contact with doctors, lawyers and others may leave him wondering whether his trouble is due to brain damage, "nervousness," or imagination. Although most patients eventually recover, it can be at a considerable cost in time, money and suffering; and a certain number remain permanently incapacitated by the post-traumatic syndrome.

METHOD

The general method employed was follow-up interview and examination of patients who had suffered head injuries. Only those injuries were included which were severe enough to result in admission to a hospital for 24 hours or longer. Forty-eight cases were found among 130 patients who had been admitted to the neurosurgical service of Temple University Medical Center because of a head injury from January 1, 1957 to October 1, 1959. Together with 2 other patients, the total number of subjects is 50, with age range from 15 to 57 years, and a mean of 31. It is not easy to say whether the patients we saw are a fair sample of all head injured subjects. Our sample may contain a larger proportion of patients with residual symptoms, since these would probably be more likely to agree to a re-examination. The interval between the injury and examination ranged from 5 to 36 months, with a mean of 12 months. In only 10 cases was the interval greater than 18 months.

The interviews were conducted by psychiatrists along the lines of the usual medical and psychiatric history. Data were recorded on a form consisting of 80 items covering both physical and emotional aspects of the injury and recovery, as well as details of the pre-traumatic life situation and personality. Examples of the variables which were inquired into are: the subject's socio-economic status; type and severity of injury; nature of the post-traumatic symp-

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toms; and level of adjustment following injury.

The original aim was to divide the subjects into two groups, according to whether or not they had developed the post-traumatic syndrome. The two groups would then be compared, in an effort to determine which variables correlate with the occurrence of the syndrome. However, in many cases it was difficult to decide whether or not the subject had the post-traumatic syndrome. Most patients had developed some, but not all, of the characteristic symptoms. There was quite a scattering of symptoms among the subjects, with no obvious clustering which would allow a division of the sample into groups. The number of subjects showing each of the symptoms 6 months after injury is presented in Table I.

This scattering of symptoms raises the question of the definition of the post-traumatic syndrome. We considered the definition of Raines *et al.* (3, 16), based on their study of Marines who had suffered head injuries during the Korean conflict. Their definition appears quite reasonable: the post-traumatic syndrome consists of headache as a prominent symptom associated with at least one each of the "intellectual" symptoms (impairment of memory or concentration) and emotional symptoms (anxiety or irritability). However, among our subjects this definition excluded quite a few who had significant symptoms but did not meet the above criteria.

The issue is complicated by the fact that

each symptom can be caused by organic brain damage or by emotional factors. Furthermore, there is considerable overlap with the symptoms of the traumatic neurosis, as commonly understood (or, post-traumatic hysteria, in the usage of Brosin (2) and others.) Some of our subjects, if examined by a psychiatrist, would be diagnosed traumatic neurosis or post-traumatic hysteria, while a neurosurgeon might classify the same patients as post-traumatic syndrome.

Therefore, it was decided to ignore temporarily all possible classifications, and instead study all the symptoms of all the patients. The reasoning was that most patients had had one or more of the symptoms listed above at some stage of their convalescence. They had suffered to a greater or lesser degree, and the symptoms had persisted for varying periods. There was a continuum extending from the least degree of symptoms and incapacity to the highest. Each patient was rated on a scale from 1 to 5 by the psychiatrist who interviewed him. The factors which went into the rating were the degree and duration of symptomatology and incapacity from the symptoms listed in Table I. Regardless of how many of these symptoms the patient had, or what caused them, he received one rating which roughly expressed the degree of suffering and incapacity he had experienced from post-traumatic symptoms. Note that symptoms due to gross neurologic changes are not included here. A rating of 1 is given for the lowest degree and 5 for

TABLE 1
INCIDENCE OF SYMPTOMS 6 MONTHS AFTER HEAD INJURY N=50

Symptoms	Number of Subjects	Percentage of Subjects
Anxiety	26	52%
Headache	26	52%
Irritability	20	40%
Dizziness	18	36%
Fatigability	18	36%
Impaired concentration	14	28%
Impaired memory	11	22%
Insomnia	10	20%
Reduced alcohol tolerance	6	12%
Other Symptoms	7	14%
No symptoms 3 months after injury	11	22%
No symptoms 6 months after injury	13	26%

the highest degree of symptoms and incapacity. Reference will be made below to "severity of post-traumatic symptoms." By that we mean the rating on this scale.

A few examples will help explain this system of classification :

Class 1.—A 25-year-old woman, while walking slipped and hit her head, and was unconscious for a few minutes. She was hospitalized for 4 days, and discharged with the diagnosis of concussion. She was able to return to work within a few days. She experienced some tiredness for about a month, which resulted in her getting a little more sleep than usual. Afterwards she felt fine, with no residual symptoms.

Class 3.—A 30-year-old man who suffered a concussion in an auto accident, was hospitalized for 4 days and returned to work after 3 weeks. Nine months later he still complained of headaches and dizziness which seemed to be worse in strong sunlight. He was able to work but was worried about these symptoms, felt there must be definite brain damage, and feared that he would get worse. His concern over his health was restricting his social life, and he was rather preoccupied with a lawsuit in which he hoped to secure compensation for his injuries.

Class 5.—A 21-year-old man who had a severe head injury in an auto accident, was unconscious for 4 days, and afterwards had aphasia and right hemi-paresis, both of which gradually improved. Six months later he still had difficulty speaking and felt weak. He had all the post-traumatic symptoms except insomnia, and was unable to work. Whereas he previously had been somewhat irresponsible and carefree, he now was serious and cautious.

The distribution of subjects on this symptomatology-incapacity scale is shown in Table 2.

Symptomatology- Incapacity Rating	Number of Subjects
1	12
2	9
3	17
4	9
5	3
Total	50

It will be noted from this table that a sizable number of patients recover promptly (class 1), but that a somewhat larger number suffer moderately severe symptoms for an appreciable length of time (class 3) and that a smaller number have severe symptoms and incapacity (class 5). Classes 2 and 4 occupy intermediate positions.

The rest of the project consisted of a search for those factors which are responsible for severity of post-traumatic symptoms.

The patients were rated in many categories of presumed or possible significance for the post-traumatic syndrome. The ratings were recorded in a manner suitable for IBM tabulation. Many of the variables could be roughly quantified; an example is the symptomatology-incapacity index mentioned above. All the data were then tabulated by use of the IBM 650 digital computer machine. The next step was the search for significant relationships between the severity of post-traumatic symptoms and, on the other hand, each of the other variables. The chi square test of relationship was used. All the chi square values were calculated by means of the digital computer machine.

RESULTS

Some of the more important variables will be mentioned individually. For some of these, the distribution of patients with respect to that variable will be shown; and the presence or absence of relationship with severity of post-traumatic symptoms will be indicated.

1. *Severity of injury.* In evaluating the severity of injury we adopted the standard used by Raines, *et al.* (3, 16) for closed head injuries. There are 3 categories: 1. A blow to the head without apparent neurological significance; 2. Concussion, with no subsequent evidence of brain damage; 3. Prolonged unconsciousness or other evidence of brain damage. The distribution of cases according to severity of injury is shown in Table 3.

No significant relationship was found between severity of injury and severity of post-traumatic symptoms ($X^2=1.6804$; $p>.2$).

TABLE 3

DISTRIBUTION OF SUBJECTS ACCORDING TO SEVERITY OF INJURY

Injury Category	Number of Subjects
1 (least severe)	11
2	20
3 (most severe)	19
Total	50

2. *Degree of pre-traumatic personality disturbance.* Each patient was rated on a 4 point scale as to degree of personality disturbance prior to injury. For the purpose of this study we did not consider the type of personality disturbance, but only estimated the degree of departure from normal. The distribution of subjects according to pre-traumatic personality disturbance is shown in Table 4.

TABLE 4

DISTRIBUTION OF SUBJECTS ACCORDING TO PRE-TRAUMATIC PERSONALITY DISTURBANCE

Rating of Personality Disturbance	Number of Subjects
1 (least disturbed)	13
2	22
3	10
4 (most disturbed)	5
Total	50

Pre-traumatic personality disturbance was significantly related to severity of post-traumatic symptoms ($X^2=26.178$; $p<.01$).

3. *An injury which is psychologically traumatic.*

Example: A 35-year-old man who was driving an automobile was involved in a collision with another car. His brother, with whom he was very close, was killed. The subject is an unaggressive man with a strong conscience. For about 6 months he was preoccupied with thoughts of his brother, and he seemed to blame himself for the accident. He developed marked post-traumatic symptoms with no evidence of brain injury.

Each subject was rated in this category on a 4 point scale, analogous to the ratings previously described. The distribution is shown in Table 5.

TABLE 5

DISTRIBUTION OF SUBJECTS ACCORDING TO DEGREE OF PSYCHOLOGICAL TRAUMA

Ratings of Psychological Trauma	Number of Subjects
1	11
2	22
3	12
4	5
Total	50

Psychological trauma was significantly related to severity of post-traumatic symptoms ($X^2=29.4853$; $p<.01$).

4. *Persistent neurologic defects.* This refers to those defects existing at least 6 months after injury. These were found in 13 patients (Table 6).

TABLE 6

PERSISTENT NEUROLOGIC DEFECTS

Symptoms	Number of Patients
Partial aphasia	3
Post-traumatic seizures	2
Ataxia	1
Other incoordination	4
Loss of smell and taste	3
Impaired hearing	1
Tinnitus	1
Impaired motor power	2
Hyperesthesia of scalp	1

Severity of neurologic sequelae was rated on a 4 point scale. A significant relationship with severity of post-traumatic symptoms was found ($X^2=17.6011$; $p<.01$).

5. *Compensation.* Some form of compensation was involved in 24 cases. There was a significant relationship between the factor of compensation and severity of post-traumatic symptoms ($X^2=9.3599$; $p<.01$).

6. *Special stress in early life.* This includes such factors as open conflict in the family; separation from a parent; and economic or socio-cultural stress of the family in the community. Among those patients (46) who could be rated on this point, 24 had undergone such stress in childhood, and they were found to have worse post-traumatic symptoms ($X^2=66.605$; $p<.01$). Perhaps this factor is related to pre-traumatic personality disturbance.

7. *Psycho-social stress during convales-*

TABLE 7

SEVERITY OF POST-TRAUMATIC SYMPTOMS AS RELATED TO OTHER FACTORS

<i>Significant Relationship</i>	<i>Probable Relationship</i>	<i>No Relationship</i>
Pre-traumatic personality disturbance	Psycho-social stress during convalescence	Severity of injury
Persistent neurologic defects	Duration of post-traumatic amnesia	Sex
Psychologically disturbing injury		Age
Compensation involved		Race
Special stress in early life		Occupation
		Education
		Type of injury (assault, auto accident, etc.)
		History of athletic activity
		Previous head injury

cence. Examples of this are: an unsympathetic environment; the development of a new, painful situation not associated with the injury; or the continuation of environmental stress which existed at the time of injury. There were 22 such patients. They are rated as to severity of stress on a 3 point scale. *There appears to be some relationship between this factor and the severity of post-traumatic symptoms ($X^2=9.6311$; $p<.05$).*

8. *Duration of post-traumatic amnesia* was found to be possibly related to severity of post-traumatic symptoms ($X^2=7.904$; $p<.10$).

Other variables were tested, and no relationship was found between them and severity of post-traumatic symptoms. These are shown in Table 7 which is a summary of the findings.

DISCUSSION

In a personal sense, the most surprising finding was that severity of injury was not related to severity of post-traumatic symptoms. One's clinical impression is that there is such a relationship. Careful re-examination of the data indicated the following possible explanations: 1. This clinical impression is actually based on those patients with residual neurologic defects. These subjects had severe injuries and had more post-traumatic symptoms, but there were many others with equally severe injuries *according to our standards* who made good recoveries. 2. The second point follows from

this, and concerns the manner of rating severity of injury. This was done on the basis of length of unconsciousness and other signs of brain damage at the time of injury. But it is known that some of this damage is reversible; the good recovery of some severely injured patients must be based on this fact. On the other hand, irreversible damage, as detected by persistent neurologic signs, is associated with increased post-traumatic symptoms. 3. A third reason for the lack of relationship is that many patients had relatively severe reactions to minor injuries.

Turning to the psycho-social factors, one of the most definite relationships is between pre-traumatic personality disturbance and post-traumatic symptoms. In considering this result, it should be remembered that our estimate of the pre-traumatic personality is of necessity approximate. Rating was based on our clinical impression during the interviews and a review of the patient's social, occupational and family adjustment prior to the injury. Essentially the same method has been used in other studies (5, 8, 16).

In spite of this caution, we believe there is a causal relationship between pre-traumatic personality disturbance and post-traumatic symptoms. It seems that where a personality disturbance exists, a head injury is usually enough to upset the emotional balance and result in prolonged symptoms. We found this to be equally true for neurotics and patients with character disorders.

Some of the patients showed neurotic reactions in addition to, or in place of, post-traumatic symptoms. The most common ones were the tendency to use the injury as a face saving device for all other difficulties; the fear that a vital part of the body was irreparably injured; the feeling of vulnerability, or that one has been abandoned by fate; guilt reactions if the subject contributed to the accident; and fear of insanity.

Interestingly, some patients with personality disturbances recovered promptly, and showed no tendency to use the injury or their symptoms in the service of neurotic needs. Evidently, for these subjects the injury was not particularly stressful psychologically; perhaps it did not touch upon their important conflicts. Also, it seems that these patients had no previous tendencies to somatize their anxiety.

Injuries which were psychologically traumatic seemed closely related to severity of post-traumatic symptoms. However, we regard this result as merely suggestive because of the difficulty in retrospectively rating how disturbing an injury was. Both patient and examiner are apt to be influenced by the severity of present post-traumatic symptoms, which of course vitiates any subsequent correlation between the two factors. Our clinical impression is that the emotional impact of the injury is indeed important.

In those cases where compensation was involved, the patients had relatively worse post-traumatic symptoms. Whether the matter of compensation was settled or not did not appear significant. We have no explanation for this latter fact.

IMPLICATIONS

These results are generally in line with those of other authors (5, 8, 16, 21, 23) in indicating that emotional factors and circumstances of injury seem to be relatively more important than severity of injury (as ordinarily measured) in causing post-traumatic symptoms. Yet, organic, structural changes are also important, as indicated by the significance of neurologic sequelae.

At this point it should be stated that in spite of our emphasis on organic versus psychogenic, we share the present day

holistic view of man. By "organic" we refer to those biological processes which at present are studied by a certain type of operations (neurologic exam, EEG, etc.); and by "psychogenic" we mean processes which are studied by other operations (psychiatric interview, etc.). We believe that in the present state of our knowledge the distinction is valid and necessary.

One reason for the distinction is that it determines the physician's therapeutic approach. Lynn, *et al.* (9) have pointed out that where the organic factors predominate, the doctor aims for retraining the patient and development of his undamaged capacities. He is oriented towards the probable acceptance of a certain amount of limitation of function. On the other hand, in psychogenic problems the indicated treatment is some form of psychotherapy, with the assumption that full recovery is possible. The proper balance of these two approaches depends on the accurate appraisal of the relative importance of each factor.

The problem of determining the extent of residual brain damage in individual cases can be extremely difficult. Various authors (2, 21) have drawn up lists of criteria to distinguish organic from personality determinants, but they conclude that frequently the distinction is still hard to make. Often some of the criteria point towards an organic origin and others toward an emotional one. The electroencephalogram may be of help, but can not be relied on confidently because of false positives as well as false negatives (2).

Obviously, the situation will be improved only by the development of better neurologic and psychiatric diagnosis. In each case, advances may take the form of entirely new diagnostic modalities or better application of existing ones. For example, on the neurologic side, the use of the electroencephalogram may be refined so that its value is increased.

Regarding the psychiatric aspects, at Temple University Medical Center a program of psychiatric follow-up of head injured patients has been instituted, in close conjunction with the neurosurgical follow-up. The hope is that continued contact with these patients will reveal more exactly how neurotic forces operate to prolong symptoms

and disability; and how these forces interact with symptoms of organic origin.

The second purpose of our follow-up is therapeutic: we attempt to deal with the neurotic and regressive reactions which occur. In most cases supportive therapy suffices. Where the injury has released a deeper neurosis, it is handled in the usual psychotherapeutic ways. Attention is also directed to the patients' reality situations: they are helped to obtain needed services from outside agencies such as the State Bureau of Vocational Rehabilitation and sheltered workshops. The results of this program will be reported in the future.

SUMMARY

In this study the post-traumatic syndrome was investigated. It was found difficult to define the limits of this condition, and particularly to distinguish it from post-traumatic hysteria. Therefore, both diagnoses were temporarily ignored, and the injury was broadened to the general sequelae of head injuries, other than definite defects caused by known neurologic lesions.

These sequelae are psychosomatic in the truest sense of the term. They represent an intricate combination of organic and emotional processes. It seems that the symptoms following head injuries signify the sum of two quantities: 1. The damage to the brain and its surrounding structures; and 2. The patient's emotional reaction to this damage and to the experience of the trauma.

The important problem is to assess the proportion of each quantity in individual cases. In the hope of contributing to its solution, psychiatric follow-up of head injured patients has been instituted.

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PRINCIPLES OF ADMINISTRATIVE THERAPY

D. H. CLARK, F.R.C.P.E., D.P.M.¹

In a previous article(2) the author described Administrative Therapy—the art of treating patients in a psychiatric institution by administrative action. Some of the pains and problems of the administrative therapist were described and some of the methods to be followed in organization of the patients' life, in staff and medical organization and in leadership of the therapeutic community. This paper attempts to explore further aspects of administrative therapy.

An increasing number of experiments, all claimed as "therapeutic communities" are being set up in Britain and the U.S.A. Though these projects cater to differing groups of patients and consequently have different organization, they have in common a belief that modifying the social structure will bring about desirable changes in the patients. This is no new idea; as T. P. Rees has pointed out, this was the belief that inspired most of the great founders of institutional psychiatry and was expressed in their term "moral treatment." In their time, however, they argued from self evident principles arising from religious belief or the doctrines of the Age of Reason, though as pragmatic physicians they justified their theories by their successes. Now we base our theorizing on the work of social scientists, in particular the descriptive studies of social anthropologists studying mental hospitals and comparing them with other societies, the experiments of social psychologists with experimental groups and the experiences of psychiatrists in group psychotherapy. We like to believe that we base our practice on a more secure theoretical foundation than our forefathers; let us hope so, lest our endeavours decline into dreary custodialism as did theirs.

Most of the studies describe the changes made in the organization: the increased consultation, the opening up of communication, the democratic practices. They usually give hints of the anxieties aroused and the storms endured, and a few discuss the

method used to introduce the changes. Hardly any of the studies have discussed the actions of the leader of the therapeutic community. There is even a sort of pretense that he hardly exists—that it could all have happened without his presence. Much of the exploration and innovation in the experiments is, of course, done by the junior staff and the patients themselves and it is from them that the enthusiasm and therapeutic drive comes; the leader is but a catalyst. Yet it is as fatuous to ignore his contribution as it is to overestimate it. The papers describing therapeutic community experiments are nearly all written by the initiators themselves, an impressive group of men and women whose personal contributions must have often been decisive.

It is important to examine the methods of administrative therapy for others are seeking to repeat the work. Young psychiatrists are trying to set up therapeutic communities and are puzzled when things go wrong. It is worth remembering that the first recorded attempt at a Therapeutic Community was a failure. Bion and Rickman aroused such hostility by their attempts to restructure Northfields Hospital that they were extruded, as Taylor(7) describes.

The introduction and maintenance of a therapeutic community is not a simple task which can easily be accomplished by naïve enthusiasm. The old custodial regime has persisted because it offered comfort and relief for anxiety for many of the staff, especially those in senior positions, and attempts to rock it may be defeated by hostility and inertia.

Administrative Therapy is the art of organizing and directing a human organization in which psychologically disturbed people may acquire great personal stability and better social adjustment. It may be practiced in a single ward, in a section of a hospital or in a whole hospital. It is a form of large-group therapy in which most of the work is done with the staff so that the patients may benefit from the atmosphere and environment produced. It draws most of its ideas, concepts and methods

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from individual psychotherapy and the psychiatrist's understanding of human dynamics but owing to the size of the groups concerned there are other areas of knowledge which are relevant, in particular, social psychology, social anthropology and the methods of business administration.

An administrative therapist comes to a custodial mental hospital and wishes to lead it to a more therapeutic way of functioning; he knows that the job can be done better and the patients helped more effectively, but the staff of the hospital, the patients and the neighbouring community do not know it. How is he to help them make this change? Much depends on how the staff feel about their work; if they are secure, confident, settled and certain that they are doing things well and that there is no ground for criticism, his task will be difficult indeed. Nowadays, however, a mental hospital running on custodial lines is not usually settled and confident. Morale in such institutions tends to be low, and there is a great deal of doubt, self questioning and anxiety among the staff, a whisper of new things afoot elsewhere, a query whether they could perhaps not learn something, coupled with sturdy denials that there is anything to be said for any of these new fangled notions.

First, the administrative therapist must assess the situation fully; assess the hospital, its morale, its functioning, the key persons and their knowledge, skills and attitudes, and most important the potentialities of the situation: the desire for change, the possibilities of change, the chances of money for new buildings, new developments and extra staff. After he has made this assessment he can begin to plan the approach; the change should be gradual and the innovator should go slowly. As occasion offers, the therapist must enunciate the principles that he regards of value in the hospital. These were clearly set out in the W.H.O. Report on the Community Mental Hospital(8): the need to trust the patients, to give them freedom, responsibility and a fruitful and active life. Though in that report they are mentioned as principles to be applied to the patients, they also apply to the staff. They too must be shown trust; they must be given scope for

initiative; they must be allowed as much responsibility as their training, knowledge or personality structure will permit and they must have a full, active life. Many of the vicious degenerate practices of the old mental hospitals arose in the sheer boredom of staff penned for long years in a custodial hierarchy waiting to step into dead men's shoes.

Who are the people to help in the process of change? The social anthropologists have something to teach us here; they tell us that the first person to greet the newcomer to any community is a deviant. The administrative therapist should not immediately work with the first person who comes to him with ready protest. Further he should not bring in from outside too many new people who "know his ways." If he does there is a sad danger that they will be treated as other bright doctors, administrative nurses, occupational therapists and others have been in the past; they will be quietly ignored, cold shouldered and finally so discouraged that they leave, saying that the organization has beaten them. The Cummings(3) have pointed out that however bad a hospital may be, it is an ongoing organization and its stability depends on the norm bearers, the culture carriers. Belknap(1) pointed out in his study that the senior attendants were in fact the people who kept the hospital going and who maintained its traditions, and that attempts to impose reform on them by force had always failed. If, however, the norm bearers change their way, the new traditions are truly embedded in the fabric of the hospital. The Cummings suggested, that a suitable procedure is to find the accepted and respected leaders of the culture-carrying group and bring them to see the value of change. The Cummings went about this by inviting the staff to elect the new assistant chief male nurses and then worked with them. It is often possible to arrange for the culture carriers—the charge nurses, ward sisters or senior attendants most respected by their peers,—to go away on refresher courses or to spend a few weeks working in a hospital of more advanced methods. When they come back they can be given a free hand to show some of the things they have learned. (Nothing is of course more damag-

ing than to send a person on a course and then put him back into the same old stultified set-up.)

The new administrative therapist should examine most closely the communication system of the organization. This will nearly always be found to be stultified and hierarchical with a great blockage of information. Instructions are distorted as they filter downward, and only highly selected (and often misleading) information is allowed to reach the top. This can be changed. The most effective way is to start new meetings; this will gradually lead to group government and decision making. The administrative therapist finds group government congenial; it is a most effective way of allowing the development of new ideas. In the administration of the hospital there should be groups of senior medical and nursing personnel and groups of senior hospital officers. In the ward, group meetings, both of all the patients and of the staff are essential. In these meetings people who have never previously had a chance to make a contribution are delighted with the opportunity to come forward and speak of the things that they know; the value of this information flowing upward is immense. At the same time they see policy being formed and partake in working out its details, so that they too are committed to the new processes and changes that develop. These groups too are occasions to enunciate the principles of therapeutic organization and to work it out in practical detail.

Sensitivity in administrative action is essential too. Every administrative action can profitably be considered as carefully, and weighed as thoroughly, as the interpretation in psychoanalysis. It is not only what you say, but when, and how you say it that matters. An unpalatable decision, if delivered in the atmosphere of a friendly interview, may be accepted when it would be grossly humiliating and disruptive if communicated in a curt written message or in an open meeting. Of any administrative action it is pertinent to ask: How was it done? Did it have the desired effect? What other effects did it have? and finally, What good did it do to the patients and the staff?

Crises occur in every organization and are

not in themselves to be deplored. If everything runs smoothly, and no crises occur, it is likely that the community is ceasing to be therapeutic. It is the manner in which the crises are worked out, the open discussion, the acceptance of the solution put forward by the group rather than the resolution by panic-stricken authoritarian ukase that is therapeutic and bears within it the hope of further growth.

The administrative therapist must pay attention to the sanction and reward system of the organization. This is very important. In the classic custodial institution, promotion was by seniority and only reprimands could debar an attendant; the way to get on was to behave with extreme caution, never show any initiative lest you be reprimanded, and wait so that in due course the post of charge attendant fell to you. Punishment too often concentrated on entirely negative aspects of the functioning of the hospital: dire punishment for coming in late, for losing keys, for being involved in the disappearance of a pair of patient's boots. The end result was the traditional cautious, repressive, sullen attendant. This must be changed. Promotion should, of course, be by merit (as it already is in many hospitals) but it should not be by merit in examinations alone but by merit in patient management. Those nurses who develop therapeutic groups among patients or who take the lead in new experiments should find that this leads to promotion, whereas those who hang back from such innovations find themselves unsuccessful. There are also negative sanctions. Punishment is alas necessary in human organizations; the staff will watch with great care to see what things the new administrative therapist regards as bad. Any reprimand should be related to the therapeutic goals of the community.

The therapist must fulfil the functions of spokesman and leader of the therapeutic community. He should set goals and coin slogans; he must speak up for the community when their policies come under criticism; he must speak to the powers in the land—the Ministry of Health or the Commissioner for Mental Hygiene; he must also explain their work to the local community. He must ward off the attacks of

those who wish to limit or damage the freedom of the therapeutic community after such unavoidable happenings as accidents, deaths, drunken brawls or illegitimate babies, and he must plead for the money needed for staff, new buildings and other developments. He must judge when to pass on to the group the anxiety that these pressures engender and when to contain it within himself.

An important sphere of work is the barrier between the hospital and the community. Goffman(4) has pointed out that the traditional mental hospital is a total institution shut off from the outside world and living its own strange bizarre life with not only a wall round it but a real psychological barrier against staff going out and visitors, Press and others coming in. All that can be done to break this down is to the good. Staff living out of hospital and taking an active part in the life of the community, visitors coming into the wards of the hospital, patients going out to work in surrounding factories, voluntary workers coming in and taking part in the clubs and socials of the wards are all moves that tend to equate the standards of the outside world and those of the hospital community.

Administrative therapy in an established therapeutic community shows certain differences. All the above principles apply but much of the ground work will already have been done. The administrative therapist will be doing his work in groups, pulling together colleagues of all levels who are anxious to contribute and to make a place where patients can progress and recover. Many decisions will be made by the groups, and the therapist will be the instrument to carry them out. His main task will be to maintain the therapeutic atmosphere, to see that the community does not become diverted towards other aims or its enthusiasm dissipated. One medical superintendent once said "Do something new every three months! It doesn't matter what you do, but do something new and keep them thinking!" The method was authoritarian, but the idea valuable; there should always be new moves and developments afoot within the community so that it does not sink, as any group working with long stay disorders may, into dull dreariness. It is not necessary

for the administrative therapist himself to have bright ideas. In the open communications of the therapeutic community new ideas are forever coming up. The administrative therapist's task is not to be a creator but a selector, seeing which projects are to be encouraged and given scope and which deferred; he acts like a telephone operator, selecting those communications which are of immediate value and passing them through, choosing which are to wait for a time and which should be ignored.

The administrative therapist has a constant scanning duty to perform; he must maintain some form of contact with all levels and sections of the therapeutic community and feel and know what is going on in all groups, even those with which he has no direct communication. It is said that the best manure is the foot of the farmer and in the same way administrative therapists should constantly be moving through the unit listening to all and knowing how things are going. Parkinson(5) under the name "injelititis" has described brilliantly the condition of sagging morale in a department. The administrative therapist must forever be on the look out for incipient injelitis in parts of his organization. When he finds it (as he will) he must at once try to assess what is happening and why things are going amiss. If there are grievances he can attempt to put them right; an organization in a state of demoralisation is, however, always full of grievances and often the best thing is not to attempt to put right the grievances that are alleged but seek immediately a new goal to which the dissipated can turn their energies. At other times an attack on the organization can be therapeutic. Sivadon(6) believes that an attack on a public grievance can be a valuable rallying point to arouse constructive enthusiasm and says that he is glad that there is "always something wrong" in a hospital.

Valuable therapeutic developments often come from groups of patients and staff who are moved to attempt some group activity. The administrative machine may attempt to crush these, especially if they appear to be an attack on the existing order. It is a most important function of the administrative therapist to check the machine or the

frightened wrath of the criticised administrator, and to act as an umbrella over the tender developing plants of group activity so that they may take root and flourish. In particular he must ward off the attempts of the tidy-minded administrators, auditors and others who are only too ready to swathe any new development in red tape until it wilts and dies.

There are certain built-in tensions to which the administrative therapist must give constant attention. He must constantly bring professional groups together and try to get them to cooperate, but if he is wise he will recognise that there are certain tensions that can only be accepted and minimized; for example, the tensions between the full-time trained nurses and the part-time untrained nursing assistants, the tension between occupational therapists and women nurses attempting to activate the same group of patients, the tension between male nursing staff and garden staff and the general tensions between clerical and therapeutic staff. It is better to accept these than to pretend they do not exist and at certain times such as the Annual Sports, they can be used to stimulate rivalry and to enliven the proceedings.

SUMMARY

Further aspects of Administrative Ther-

apy are explored. Some of the methods to be used in transforming a custodial into a therapeutic institution are discussed and also methods of maintaining the momentum of an established therapeutic community.

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BEHAVIORAL CHANGES DURING HYPOTHALAMIC OR LIMBIC STIMULATION IN THE MONKEY^{1, 2}

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This presentation is a sequel to one given in April, 1958(1), in which the reticular formation primarily was the site of stimulation. Such stimulation produced changes in consciousness, genital responses, hemiballismus, rage responses and finally yawning. In the present report we have extended our observations of behavioral and depth EEG changes related to stimulation by electrodes in the reticular formation, the hypothalamus and limbic system.

TECHNIQUE

Our present electrodes are a modification of the Jasper-Delgado type, consisting of 4 strands of #50 platinum-tungsten Teflon covered wire. The tips are placed approximately 2.5 mms. apart in the vertical plane, bared for 0.5 mms. and the most distal tip bent into a hook. The assembly of 4 wires is enclosed in a polyethylene tube of just sufficient diameter to prevent the wires moving in vertical relationship to one another, and the bared ends (and the distal hook) arranged to protrude through the polyethylene tubing. The electrode placement is made using a Universal Stereotaxic instrument (Baltimore), and a #22 gauge lumbar puncture needle-shaft acts as the electrode carrier. The hook engages in the opening at the tip of the lumbar puncture needle-shaft, which shaft is held in the chuck of the stereotaxic instrument's carrier. On reaching the desired placement in the brain, merely withdrawing the lumbar puncture needle allows the electrode to remain "hooked" into the point of placement in the brain(2). This provides 3 sets of bipolar electrodes in the vertical plane for each multipolar electrode placement. The

poles of the electrodes were designated A, B, C, and D; A designating the pole at the tip of the electrode.

The electrode leads are firmly fixed as they pass through the skull, by a nylon clip screwed into the skull, and are carried under the scalp to a nylon connector plug attached to the posterior portion of the monkey's skull. This technique has provided a satisfactory means, during the past 6 years, of obtaining depth recordings and for stimulating the various areas of the reticular and limbic systems. Resting depth EEG recordings are now consistent from any selected area in these systems over periods of as long as one month. A method has been devised so that we can now record 3-7 mms. distance from the site of stimulation in the reticular or limbic systems without stimulus artefact or significant blocking(3).

The parameters of stimulation which produce behavioral changes with a minimal chance for concomitant "Jacksonian-like" motor responses has been determined in our previous investigations(1). With this in mind a Grass S4B stimulator was used to supply monophasic square top impulses, with a duration of single impulse 0.20 msec., a delay between impulse trains 0.015 msec., and only the voltage, frequency and polarity of the stimulus varied.

The monkey is seated in a chair with a "corset" restraining him from hips to lower ribs in front, and his hands are limited by cords attached by soft metal cuffs above the wrists or by a plastic collar about the neck. He thus is able to perform manual movements for psychometric testing, etc., but cannot reach above his head to pull at the electrode connections to the EEG unit or the stimulator.

The EEG is analysed as to frequencies by an Offner frequency analyser, which analyses in 10 second intervals the output of any one channel of an Offner transistor EEG unit.

The behavioral changes are recorded by

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both still photographs and 16 mm. colored movies.

The monkey is tested psychometrically, using the oddity test(2), for any change in ability to perform a learned procedure as a result of stimulation.

We have been able to make 4-5 separate multiple electrode placements in a number of our animals. These electrodes remain in place over a period of 2-4 months, at the end of which time the animal is sacrificed and the brain perfused with 10% formalin. After 2-3 weeks fixation the brain is sectioned and examined macroscopically and microscopically for confirmation of electrode placements. In many cases only the odd round cell constitutes the tissue reaction along the path of the electrode and at the electrode sites.

Stimulation of electrodes placed outside of the reticular and limbic systems have allowed control observations in our investigation.

In the interest of space only 2 sample protocols on stimulating in the hypothalamic and limbic areas are reported (of the 6 protocols recorded).

OBSERVATIONS

Hypothalamic Stimulation

Monkey #19.—Electrode location: (pole D not connected). Pole A was situated in the left lateral wall of the third ventricle, and pole B was 2.5 mm. above in the left dorso-medial nucleus of the thalamus.

Stimulation between A & B at 400 cps, polarity #1, and 8 volts resulted in bilateral pupillary dilatation, the left pupil recovering during stimulation, frequent guttural cries and the arrest phenomena.⁴ The animal made no correct choices (0/6) on the oddity test during stimulation as compared with 4/6 prestimulation. The quivering (anxious) mouth response appeared throughout the period of stimulation. Reversing the polarity merely reduced the degree of response.

Electrode location: Pole A was situated in the left lateral wall of the hypothalamus, and pole C in the left nucleus ventralis anterior of

the thalamus (pole B in the left dorso-medial nucleus of the thalamus).

Stimulating between A & C or between B & C at 400 cps, polarity #1 and 6 volts produced the same response described on stimulating between A & B except it was milder in degree.

It is noteworthy that 30-60 minutes after the final stimulation in the above hypothalamic areas (Monkey #19), when the animal was back in his home cage, he appeared confused, uncomfortable and frequently lay down, cried and would not take food. This reaction disappeared later in the day.

The next day using polarity #2 and increasing the voltage to 15 through 30 volts at 400 cps, between poles A & B, there occurred maintained bilateral pupillary dilatation, and at 32 volts the animal ejaculated, urinated and had a mild right Jacksonian episode. Immediately following this last stimulus, the animal was blind and this impaired vision continued for approximately 5 days. Following recovery of vision, stimulation using 400 cps, polarity #2, and 21 volts between poles A & B was required to produce confusion, no doubt due again to visual impairment and anxiety. The animal showed no arrest phenomena nor anxiety below 21 volts. One month after this latest stimulation, restlessness, anxiety, and the arrest phenomena occurred using only 9 volts between poles A & B. Stimulation between poles A & B, with voltages just below those producing pupillary dilatation, invariably resulted in frequent guttural cries during the stimulation period.

The depth EEG patterns, at rest, in the areas of the hypothalamus examined (Figure 1), showed a predominance of slow wave high amplitude activity (1.5-7 cps). This pattern changed on stimulation of the opposite hypothalamus, showing a reduction in the amplitude of the slow wave activity, but 20-30 seconds post stimulus the EEG pattern returned to the prestimulus pattern. Our small number of observations of this phenomena would not allow us to draw conclusions as to its significance.

Incidentally, between electrodes, poles A & D located in the left anterior hypothalamus, a 35 cps discharge was recorded at rest (Figure 1), and was found to increase in extent (not amplitude) on stimulating the opposite hypothalamus. The onset of these 35 cps bursts occurred at various stages of respiration, and were thought to

⁴ Arrest phenomena indicate a behavior characterized by impaired awareness. The animal may only show this defect by its inability to perform a learned task correctly, or the impairment may be so severe a trance-like state exists so that the animal shows no reaction to its environment.

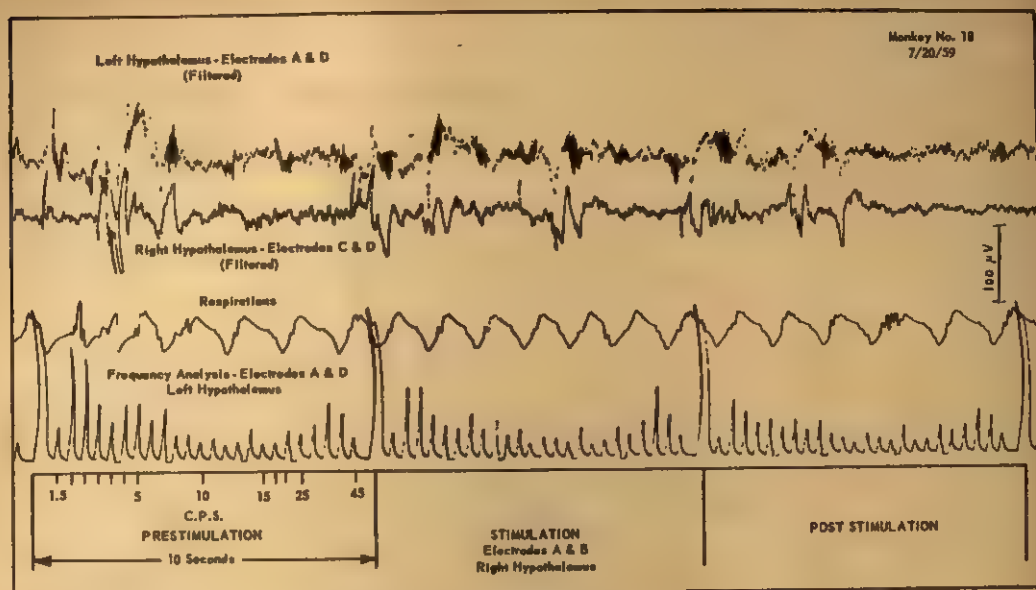


FIGURE 1
SAMPLE DEPTH EEG FROM RIGHT AND LEFT HYPOTHALAMUS. FILTERING
HAS ELIMINATED STIMULATION ARTEFACT.

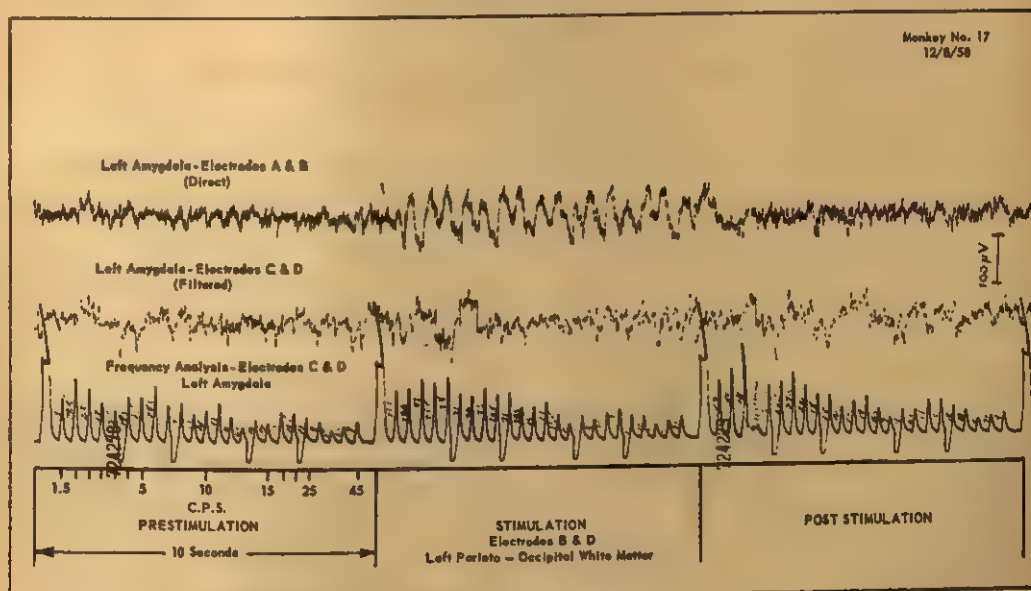


FIGURE 2
SAMPLE DEPTH EEG FROM LEFT AMYGDALA. NOTE EFFECT OF FILTER.

be discharges via the anterior hypothalamic pathways of the olfactory tract.

Limbic System Stimulation

Monkey #18.—Electrode location : (poles C & D not connected). Pole A was situated in

the anterior tip of the right temporal lobe (hippocampal gyrus), and Pole B was 2 mm. above in the right uncus (periamygdaloid area).

Stimulation between A & B using 400 cps, polarity #1 and 4 volts resulted in the animal becoming restless, but slept seconds post stimu-

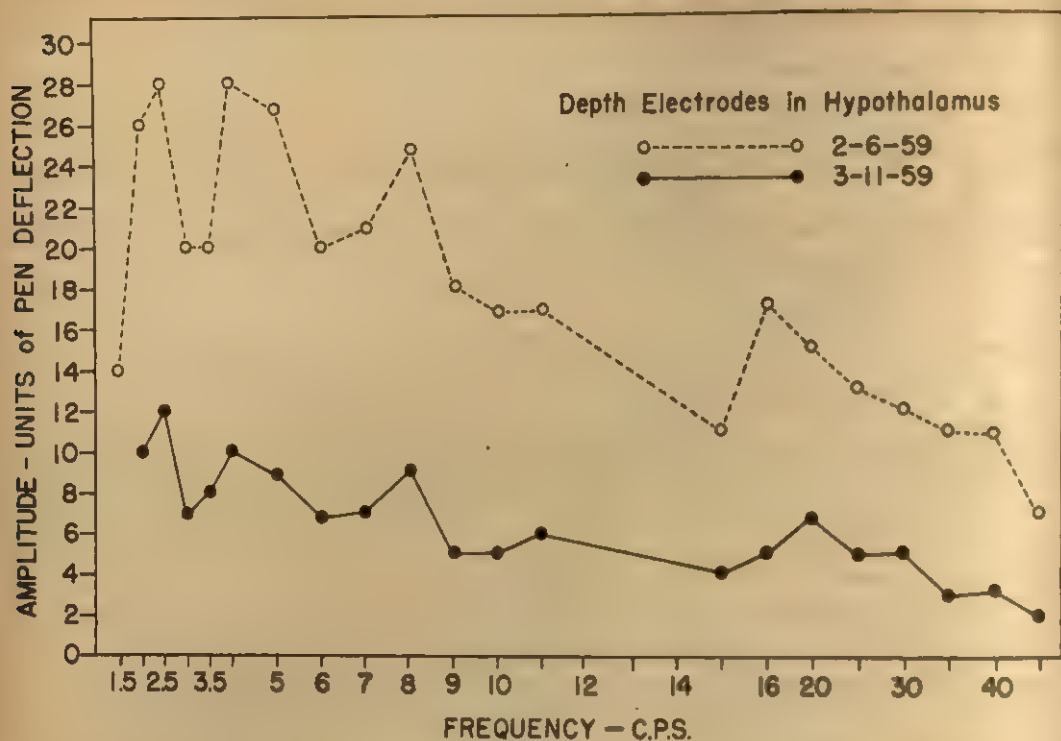


FIGURE 3
EEG FREQUENCY SPECTRA FROM SAME AREA IN HYPOTHALAMUS
RECORDED 33 DAYS APART.

lus. At 6 volts the animal appeared to become drowsy and slept post stimulus. At 10 volts, with the commencement of stimulus, lip movements occurred but ceased during stimulus, and the animal slept post stimulus. Using 30 cps, polarity #1 and 2-40 volts, no behavioral changes were noted.

Electrode location: Pole A was situated in the left hippocampal gyrus (upper portion), and pole B was 2 mm. above in the uncus.

Stimulation between poles A & B using 400 cps, polarity #1, and 2-20 volts produced no behavioral changes; changing to 30 cps, some eye blinking occurred at 15 volts.

Electrode location: Pole C was situated in the amygdala, and pole D was 2 mm. above still in the amygdala.

Stimulation between poles C & D using 400 cps, polarity #1 and 6 volts produced gritting of the teeth; at 10 volts both pupils dilated, and at 15 volts both eyes blinked. Changing to 30 cps, at 12 volts, blinking occurred and at 15 volts blinking of the eyes and chewing movements were noted.

In Figure 2 the depth EEG pattern at rest, from the left amygdala, suggests a broader

frequency spectrum for the predominant frequencies (1.5-11 cps) that seen in the depth EEG from the hypothalamus (Figure 1). Incidentally, stimulation in the left parieto-occipital white matter increased the amplitude of the slow wave activity in the amygdala.

SUMMARY

On stimulating in the hypothalamus, the following responses were observed: (a) pupillary changes, (b) anxiety, panic and agitation, (c) guttural cries, (d) arrest phenomena, (e) somnolence, (f) gritting of teeth, chewing, etc., (g) ejaculation and urination, (h) Jacksonian-like motor episodes, (i) head turning and (j) loss of vision.

On stimulating in the limbic system, the following responses were observed: (a) alerting, (b) trismus, (c) gritting of teeth, (d) smacking, licking and chewing, (e) guttural cries, (f) pupillary changes, (g) eye blinking, (h) Jacksonian-like motor episodes and (i) lethargy, post stimulus.

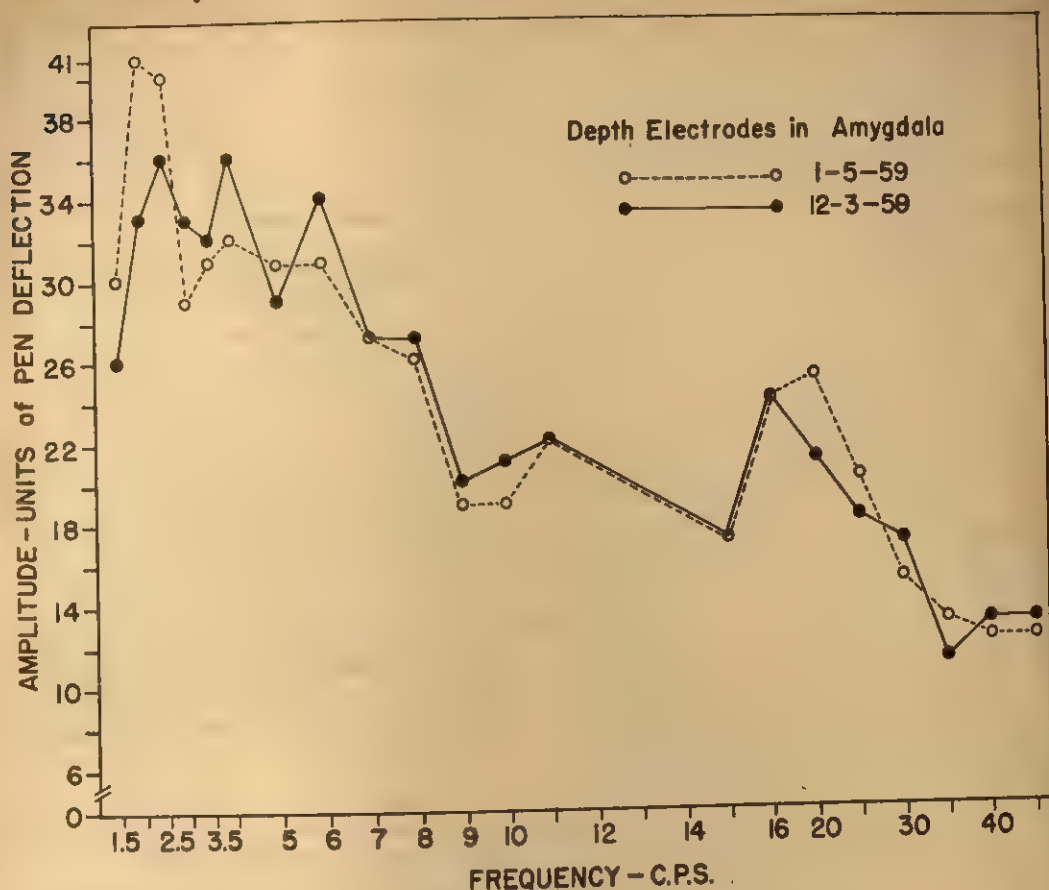


FIGURE 4
EEG FREQUENCY SPECTRA FROM SAME AREA IN AMYGDALA
RECORDED 29 DAYS APART.

On stimulating in the mesencephalic reticular formation, the following responses were observed: (a) spastic chewing movements and inability to swallow food, (b) gritting of teeth, (c) confusion—even to the point of trance-like states.

On stimulating in the basal nuclei, the following responses were observed: (a) loss of conjugate deviation of eyes and (b) head turning.

On stimulating in the parieto-occipital white matter, the following responses were observed: (a) pupillary changes, (b) marked conjugate deviation of eyes with head and body turning, (c) bilateral nystagmus, (d) tremor and (e) post stimulus, chewing movements and hippus occurred.

The study of the EEG patterns at rest or following stimulation in the limbic, hypothalamic and mesencephalic areas pointed

up the problem of EEG evaluation, and after much thought and consultation we concluded the use of frequency analysis offered the most practical means of comparing our EEG findings.

The use of a frequency analyser allows description of the EEG record in two dimensions only; the frequency and the amplitude of the signals at a given frequency. The frequencies are fixed by the design of the analyser, and are noted in Figures 1 and 2. The EEG activity is analysed for a finite period of time (10 seconds) and this information is stored, by means of capacitors, that are later discharged so that a graphic record is obtained of the total amount of activity—in terms of amplitude—at each of the frequencies analysed during this 10 second period. It can be seen that certain compo-

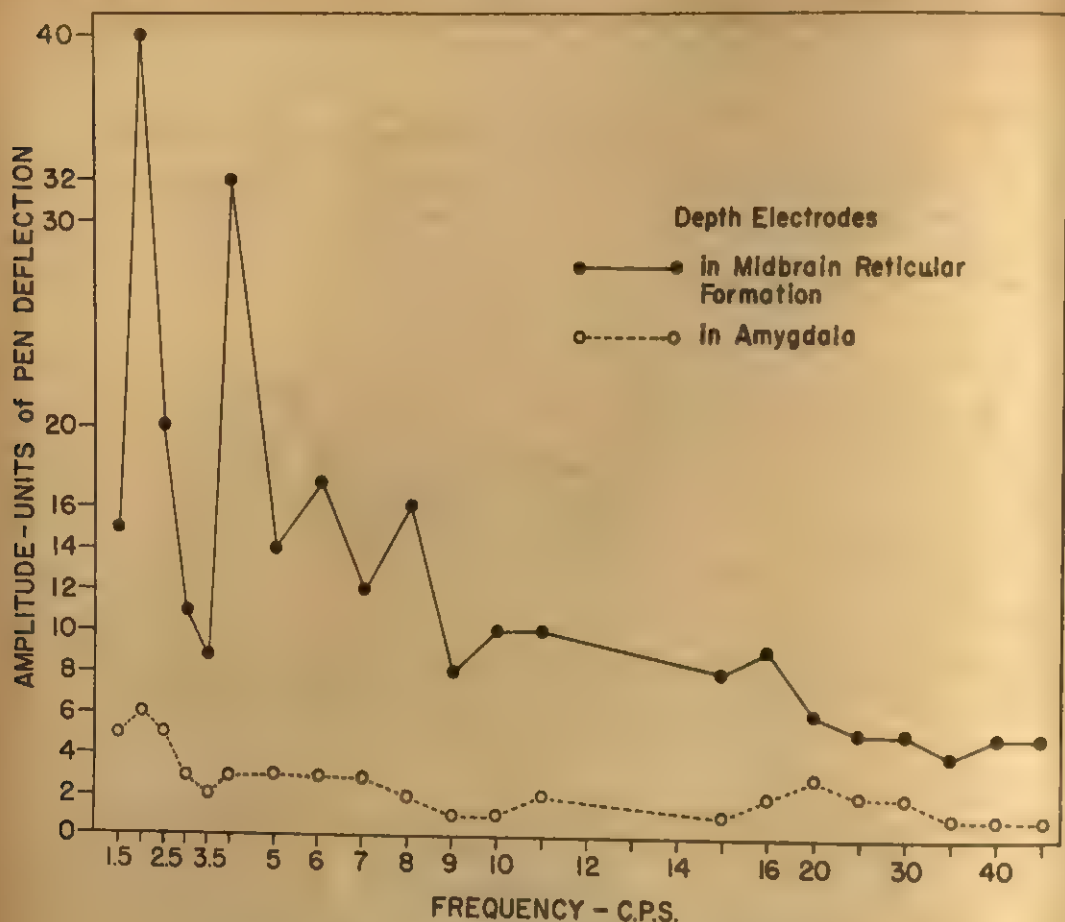


FIGURE 5
COMPARISON OF EEG FREQUENCY SPECTRA RECORDED FROM
MIDBRAIN RETICULAR FORMATION AND FROM AMYGDALA.

nents of the total signal are lost by this analytical method; namely, the phase relationships of the various frequencies, and the time of occurrence of a particular frequency during the 10 second interval. With full appreciation of the limitations of this analysis, we are reporting a preliminary description of our EEG findings.

The electrical activity of the hypothalamus appeared to be stable with regard to the inter-relationships of the various frequencies one with the other. This can be seen in Figure 3 which allows comparison of the amplitude of the activity at the various frequencies. The activity during the initial recording (2/6/59) had a much higher amplitude than did the activity recorded later (3/11/59), however, the pattern of activity remained relatively invari-

ant. Indeed, when the amplitudes of the signals at the given frequencies were correlated, a value of 0.97 was obtained. This value was found to be statistically significant, and indicates that the amplitude shifts between the various frequencies on a given day were stable when compared to the shifts on another day. The confidence limits for the correlation based on a sample of 20 frequencies ($N=20$) are 0.92 to 0.99 with a probability of 95%. These figures indicate the range through which the correlation can be expected to vary on the basis of different samples, and show that the EEG patterns reported here are characteristic of the activity which generally would be found in this area under similar conditions.

Figure 4 indicates the EEG activity found in the amygdala area. It shows that

the activity on two days, approximately one month apart, was almost identical in terms of amplitude and the frequency spectra. The stability of the EEG patterns of the amygdala area (medial amygdala and junction of the amygdala and putamen) is indicated by the correlation of these two frequency spectra. This correlation was 0.94 and was found to be significantly different from zero beyond the 1% level of confidence. The confidence limits for this correlation ($N=21$) are 0.86 and 0.98 with a certainty of 95%. These findings confirm that the activity of the amygdala is relatively stable over this period of time (one month).

Figure 5 allows comparison of the activity of the reticular formation in the vicinity of the red nucleus with the activity in the anterior commissure just dorsal to the amygdala (limbic area). It can be seen readily that the signals, at a given frequency, are generally of greater amplitude in this region of the mesencephalic reticular formation than those emanating in the regions of the anterior commissure. The frequency spectra are also obviously dissimilar.

DISCUSSION

There were no well defined limits established as to the extent of the stimulation fields about the various bipolar electrodes used in this investigation. It will be noted that several of the hypothalamic bipolar electrodes had one pole in the adjacent thalamus, and several of the limbic bipolar electrodes had one pole in the basal nuclei area. One pole of a basal nuclei bipolar electrode was situated in the preoptic-supraoptic region. However, the larger portion of the area between the poles of the above group of bipolar electrodes was in the region under investigation, *i.e.*, hypothalamus, limbic system, or basal nuclei area, and we, therefore, suggest the responses on stimulating by these electrodes were predominantly the responses of the hypothalamus, limbic system or basal nuclei region.

As noted previously(4), the changing of frequency of the stimulating impulse altered significantly the response both in degree and quality, and the characteristics of this alteration depended upon the area stimulated. No consistent response characteristic

was seen to be dependent upon the frequency of the stimulating impulse, but the higher the frequency, the less likely was the stimulus to produce Jacksonian-like motor responses at a given voltage.

In this investigation, the changing of polarity of the stimulus altered predominantly the degree, rather than the quality of the response.

Anxiety was the most common response on stimulating in the hypothalamus, and by merely increasing the voltage of the stimulus the anxiety response in a given area could be altered to panic, and in some areas to agitation suggesting rage. This phenomenon was seen particularly on stimulating in the anterior hypothalamus. This finding is interesting as Hess(5) reports motor restlessness and flight response areas in the cat to be predominantly situated in the posterior hypothalamus (ergotropic centers(6)), and the more homeostatic protective response areas (trophotropic areas (6)) in the anterior hypothalamus. In our investigation we were dealing with a different species (monkey), and our stimulating impulse is of a higher frequency. The question does arise in our minds as to whether the parameters of the stimulating impulse might alter the response from any given area in the hypothalamus, making it possible to obtain a more extensive area from which these various responses (ergotropic and trophotropic) could be elicited.

Our previous observation of anxiety, panic and agitation on stimulating in the mesencephalic reticular formation(4) is in keeping with Hess(5) who reports the flight and motor restlessness responses can be followed on stimulating backwards "into the central gray matter of the mesencephalon."

Somnolence was produced by stimulating the anterior hypothalamus, an area not far distant from Hess's(5) "hypnogenous zone" that he places in the intralaminar nuclei region.

The oral responses included gritting of teeth, chewing movements, smacking of lips and licking. Only the smacking and licking responses were limited to limbic area stimulation, the remainder of the oral responses occurring on stimulation of the posterior hypothalamus, limbic areas or

mesencephalic reticular formation. An interesting variant of the oral responses occurred on stimulation of a limbic area, namely trismus. Another variant occurred on stimulating the mesencephalic reticular formation when, rather than trismus, the animal had difficulty chewing and swallowing food because of spasm of the muscles involved with these functions. The mouth could be opened, but with difficulty in this instance.

The arrest phenomenon progressing to trance-like states was a response common to stimulation of the hypothalamus and mesencephalic reticular formation areas.

The Jacksonian-like motor episodes observed occurred on using relatively high voltage for stimulation.

At this time we have no explanation as to the dynamics for the production of eye blinking during stimulation of the limbic area, nor an explanation for the production of the 5 day period of blindness following "high voltage" (32 volts) stimulation of the lateral portion of the hypothalamus.

We were impressed with the number of similar responses elicited by stimulation in either of two or even any of three of the systems investigated (hypothalamus, limbic areas and mesencephalic reticular formation). It would appear these systems have many ramifications each with the others. Pribram's(7) concept that multi-linked homeostats condition the responses from such areas as the "limbic end brain," and the reticular formation, providing negative and positive feed-back circuits, allows much speculation as to the variety of pathways through which stimuli occurring in either the limbic or reticular systems could be directed. These theoretical circuits could serve to explain the similarity of responses

on stimulating at different areas in the brain.

CONCLUSION

Stimulation of various areas of the limbic and hypothalamic regions in the Macaca mulatta resulted in a variety of responses. These responses were compared with those obtained on stimulating areas of the mid-brain reticular formation.

It would appear that "overlapping" occurs as to the function of the limbic system, the mesencephalic reticular formation and the hypothalamus, in view of the similarity of behavior patterns elicited by stimulating some areas in these three different regions.

The EEG patterns from the limbic, reticular (mesencephalic) and hypothalamic systems varied significantly so as to suggest that each system may function basically as an individual component system of the brain, probably influenced by ramifications one with the other. This EEG study is a preliminary investigation.

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THE PSYCHOTHERAPY THAT WAS MORAL TREATMENT¹

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INTRODUCTION

With the rise of inductive science in the 17th and 18th centuries, scientists and philosophers inevitably adopted a naturalistic approach to emotional illness as an earthly rather than supernatural sickness. The enlightened men of this hopeful era believed that the dramatic exigencies of the individual's life caused his illness, and that consequently the individual deserved sympathy, respect, and, most of all, assistance in conquering his life-produced situation. When this new attitude towards the disturbed person achieved wide acceptance among intellectuals at the end of the 18th century, modern psychiatry emerged as a medical specialty.

Medicine approached mental illness in the light of contemporary physiology: since it was a disease, it should respond to pharmacological treatment. At the same time, there was a growing understanding that other, nonmedical methods were also useful in treating the mentally ill. The stress laid on these new therapeutic approaches varied widely from writer to writer. Although most physicians employed pharmaceutical therapy, some even felt that all medication was superfluous.

The non-medical methods were known after the 1750's by a variety of terms: "management," "government," "regimen," and, referring specifically to the hospital scene, "internal police." When Philippe Pinel's famous 1801 work, *Medico-philosophical Treatise on Mental Alienation, or Mania*, was translated into English in 1806(1), the phrase "moral treatment" (a literal translation of "*traitement moral*" which persisted

in use into the 20th century) replaced the earlier terms. This shift in nomenclature emphasized that nonmedical procedures were employed for their therapeutic effect and were not designed simply out of kindness or concern for the attendants' convenience. Broadly construed, "moral treatment" included all nonmedical techniques, but more specifically it referred to therapeutic efforts which affected the patient's psychology. Esquirol recognized this narrower definition: "Moral treatment is the application of the faculty of intelligence and of emotions in the treatment of mental alienation"(2).

The most famous symbol of this new therapy was the almost simultaneous unchaining of mental patients throughout Europe in the 1780's and 1790's. Humanitarianism was the major motivation behind this action, but some physicians, such as Pinel, released their patients partly to observe the natural course of the illness and, on the basis of increased knowledge, initiate more effective treatment.

"Moral treatment" consisted principally of what we might now call *milieu* therapy. Most doctors favored hospitalization for the severely ill patient. In order to break associations that were painful or that played a causal role in the illness, family and friends were usually prohibited from visiting the patient, as, of course, were the idly curious. Although patients were classified and separated according to sex, degree of illness, and socio-economic background, they all followed an orderly routine of life within the hospital. Distraction by work activity was increasingly recommended, as were amusements, which increased in number and variety over the years. The use of religious teaching varied from hospital to hospital, and the application of educational programs came only in the 19th century.

In the psychiatric literature of the time, one can also find a slight but growing discussion of how the doctor and his associates should deal with the patient. It is largely to those aspects of the doctor-patient transactions as they evolved between 1750 and 1840 and as they are presented by the out-

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standing European and American psychiatrists of the time that this paper will be devoted.

DOCTOR-PATIENT RELATIONSHIPS

Perhaps the most significant feature of the doctor-patient relationship in these years was the gradual recognition by physicians that successful therapy required more active participation by the patient. The patient's attitude toward the asylum staff, especially the physician, received increasing attention. The ideal of what the patient's relationship with the physician should be gradually shifted from one in which the doctor was the active agent working upon an essentially passive subject to one where the patient became a partner, although a subordinate one, in the therapeutic process. For the patient to play an active role in his own treatment he must not be intimidated into passivity by the physician and other hospital personnel. Nor should he be treated as an anonymous member of a diagnostic category, but as an individual and interesting personality. Since incentives were essential to accomplishment of the desired change in the patient's attitude, systems of punishment and reward developed. This whole therapeutic process implied, moreover, a greater reliance upon the rational powers of the patient as a means of improving doctor-patient contact, and this reliance in turn stimulated an emphasis upon conversation, frank discussion, and general attempts by the doctor to re-educate the patient.

For the sake of simplicity and clarity, the following presentation will deal with the various stages as a logical progression, although, in fact, overlapping concepts and retrogressive tendencies were always present. Three essential themes are evident: 1. The nature of the doctor-patient relationship, 2. The development of self-control and the elimination of symptoms through reward and punishment and the use of emotions and reason, and 3. The practice of psychotherapy and its relationship to the patients' and doctors' personalities. Although this paper stresses the techniques used by physicians, it should be pointed out that in this period (1750-1840) lay superintendents and attendants frequently

played a more prominent role in nonmedical treatment than did the doctors. The material presented here represents only a small fraction of what was written, for most of the discussions on treatment were devoted to physical and pharmacological methods and to occupational and recreational therapy. The paper is based largely, moreover, on hospital experience.

As might be expected, especially in the years before 1800, one of the dominant themes in treatment was the need to gain ascendancy over the patient. In this way the patient could be led to control his behavior; such control seemed to be the first step towards cure, if not synonymous with it. At first there were traces of the former brutality. William Cullen(3) (1790) sanctioned the use of blows provided the patient understood their intent, and Benjamin Rush(4) (1812), citing a method of taming refractory horses in England, recommended that the patient be kept standing for an entire day.

These methods soon gave way to milder methods, with demonstrations of authority. A striking example was the approach used by Pargeter(5) in the 1790's, who thought treatment would be useless unless the physician gained supremacy in his first encounter with the patient. Suddenly flinging open the door of a patient's room, he would rush inside, catch the patient's eye, and thereby stare him down, so that he frequently achieved complete dominance without speaking a word. Pargeter claimed this technique had never failed him, but warned that it might not always work, and that therefore it was essential to obtain a case history before attempting to use this procedure. Once he had gained ascendancy he perpetuated it by treating the patient mildly and by attempting to win his confidence. He emphasized that too severe compulsion would be cruel and that it would arouse violent reactions in the patients and decrease their manageability.

Gradually such diverse physicians as Monroe(6) in 1758, Daquin(7) in 1791, Chiarugi(8) in 1793, and Pinel in 1801 came to suggest a less authoritarian approach. They emphasized that firmness should be tempered with kindness and that control was possible without abuse. Pinel

believed firmly in coercion where needed, but preferred the psychological effect of a show of force to its actual application.

After 1800 medical writers broadened the method of achieving dominance over the patient. Although Cox(9) in 1806 mentioned that some patients needed threats, he insisted that firmness and tenderness be the rule; he emphasized that kindness bred confidence, and that by releasing a patient from mechanical restraint the doctor might well win his devotion. In the same year Trotter(10) stressed the patient's need to sense the physician's trust in him. In 1809 Haslam(11) dismissed the effectiveness of the penetrating eye, stating that he had never found anyone willing to test this method on a furious maniac. He emphasized instead that patients tended to respect those who understood their complaint, and that therefore one could gain ascendancy through sympathy and understanding. He sanctioned the use of authority when needed, stating that one might act but should never threaten, and that setting an example was often effective.

In later years there was a shift to a relationship based on the subtleties of friendship and a consequent recognition of the value of tact in therapy. It was mentioned by Chiarugi in 1793 and by Heinroth(12) in 1818, and especially stressed by Burrows(13) in a perceptive account in 1828. In 1838 Ellis(14) proclaimed that women were superior to men in dealing with mental patients because of their greater tact.

With the emphasis on teaching the patient to control his own behavior, the question of reward and punishment inevitably arose. As early as 1795 Ferriar(15), who believed that a patient must minister to himself to achieve a cure, suggested setting aside a certain room for those convalescents whose behavior had become acceptable. Haslam suggested a few years later that the doctor should punish the rational but uncooperative patient by confining him to his room or forbidding him contact with other convalescents. He advocated immediate punishment, preferably ordered in front of other patients because, since the culprit tended to be awed by spectators, he would submit more readily. Haslam considered this type of coercion indispensable, since

self-control was essential for recovery and since fear of punishment deterred both the rational and irrational person.

This punitive technique was also used in the 1820's at the Friends' Asylum in Philadelphia(16); a patient's privileges would be curtailed for lack of self-control, but usually restored to him immediately if he evinced remorse for his behavior and promised to correct his errors. In 1833 Allen(17) emphasized the need to foster a patient's self-command by shaming him for misbehavior. He recognized that this course of action might encourage patients to conceal their illness, but felt that this situation was acceptable as long as the doctor was not deceived. Two years later Prichard(18) introduced the idea of making another person the agent of punishment and repression, so that the doctor could remain a protective figure, kind and indulgent.

Such emphasis on self-control signified training the patient to control his emotions, usually by exercising his will-power. Emotions aroused by the therapist might also help the patient; for example, in 1813 Samuel Tuke(19) cited the use of mild fear, as in the educational upbringing of children, but praised more highly the encouragement of such feelings as hope and self-esteem.

There was also a concept in therapy of the manipulation of emotions in another fashion. This method was often termed the use of "contrary passions" and was illustrated by Battie(20) in 1758, when he said that fear could be used to combat anger and that joy could dominate sorrow. But he warned that since it was difficult to predict results, only the doctor should decide whether this method was safe and advisable. In 1789 Harper(21) spoke out against any sudden check of the patient's passions, and instead recommended gradual replacement with other, more pleasant emotions. For example, the doctor should try to amuse the grief-stricken or depressed patient and should trust and console the jealous one. Pinel suggested providing pleasant surroundings and a cheerful atmosphere for the melancholic; his student Georget(22) thought that the doctor should try to impart courage to this type of patient. In 1803 Reil(23) proposed an early

form of psychodrama to arouse proper feelings in the patient.

A gradual shift to the use of milder emotions is evident in Cox's suggestion that other emotions besides fear be used, and in Allen's statement that if one must use fear one should do so only by removing sympathy. The doctors of the 1790's brought increased hope of cure to their patients, but it was only later that writers such as Trotter, Pisani(24), and Browne(25) emphasized the actual therapeutic value of hope.

Accepting the contemporary tripartite division of personality, Heinroth in 1818 advocated changing and stabilizing the emotions, giving direction to the will, and correcting the intellect. The writers before 1800 generally believed that these goals were seldom achieved by appealing to the patient's reason. Cullen pointed out that it was of little value in hypochondriasis, Perfect(26) made the same point regarding treatment of religious melancholy, and all physicians concurred in acknowledging the futility of reasoning or arguing with a patient about his delusional ideas. Of the various alternative methods which might serve to banish delusions and hallucinations, one of the most popular was a form of suggestive trickery termed "pious frauds" by Cullen and "strategems" by Pinel. The following is an example: a woman who thought she had snakes in her stomach was given an emetic; when she vomited, some real snakes were introduced into the basin and she was thereby convinced that she had finally expelled them. There were certain dangers in using this method, as Pinel recognized. He cites an initially successful strategem which was followed by a complete relapse when the patient learned it was a hoax.

After 1810, however, physicians came to frown on the use of strategems, agreeing that one should never deceive a psychiatric patient. They did continue to employ other types of suggestive therapy, as in the use of placebos by William Cullen and the superintendent of the Friends' Asylum. Interestingly enough, we have as yet found no direct evidence that the principles of mesmerism influenced the writers discussed.

Ideas about how to conduct what we

now call psychotherapy—the conversational transactions between the doctor and the patient—developed slowly. Beginning about 1790, there was increasing agreement that the doctor should know his patients individually and intimately by associating closely with them. Hahnemann(27) in 1792 spent two weeks studying a patient before embarking upon therapy. In 1793 Chiarugi requested referring doctors to provide case histories, and Pinel, Cox, and Heinroth also strove to obtain detailed records of their patients. Heinroth asserted that psychopathology would vary with age, sex and temperament, and that therefore therapy should vary accordingly. The individual personality was investigated more deeply by the phrenologists such as Combe(28) (1831) and Gall(29) (1825), who made the very perceptive suggestion that the physician might learn much by observing his patient's behavior and by encouraging him to talk about his past life.

The earlier psychiatrists were probably following association psychology when they stressed diverting the patient from his painful thoughts. This approach led to a therapy of distraction and repression which contributed to the widespread use of milieu therapy. Harper in 1789 suggested that ideas close to the original cause of the illness should not be mentioned or indulged, but that pleasant new ideas should be substituted for them. He also emphasized the necessity of breaking up habit patterns, but did not give any hints as to how this might best be done.

The doctors after 1790 recognized that conversation had certain beneficial effects. In 1795 Ferriar reported a cure that resulted from reflections initiated by a doctor's visit, and Allen mentioned a similar phenomenon much later. What Hallaran(30) in 1818 called "the business of conversation" was generally considered important, but the early physicians gave few rules about how to conduct this "business." In 1809 Haslam suggested that in order to learn more about the patient the doctor should not interrupt him too often, and most doctors agreed that one should avoid irritating the patient or bringing up painful ideas; for example, Burrows (1828) urged that defects in

memory or speech not be called to the patient's attention.

After 1830 the use of conversational therapy was discussed more fully. In that year, Conolly(31) stated that the "great business" of the doctor was to instruct, amuse, soothe, converse with, and advise his patients. In 1833 Allen wrote a little more extensively than most doctors on this subject. He praised "intellectual therapy" and mentioned some of his own methods. He saw his goal largely as one of making "truth visible" to the insane, a purpose previously mentioned by Chiarugi and Reil. Allen maintained that with intelligence and insight the doctor could trace his patient's peculiarities to their origin. He gives an example of his treatment of a depressed patient: summoning the man to him each evening, Dr. Allen related his own life history in detail, keeping the patient's attention by leaving off each time, like Scheherazade, at a point of great interest, and at the same time guiding the patient by subtly introducing his views about the patient's bad habits and the best way to overcome them.

The rise of phrenological thought in the 19th century introduced another concept into psychotherapy. In 1831 Combe emphasized that one should first know human nature in general and then use phrenology to understand the individual patient's personality; thereby a type of analysis came into being. The phrenologist-physician tried to help the patient understand that he had become ill because some of his motivations and faculties (associated in theory with specific areas of the brain) were over- or under-developed. With the aid of his physician the patient was to repress the over-active faculties and at the same time strengthen the weaker ones, so that his personality would come back into balance and he would recover his health(32).

If an interest in the patient's fundamental personality was a relatively later development, so was any real insight into the relevance of the doctor's personality, although there were a number of statements about how the doctor should behave towards his patients. In brief, he should be intelligent, courageous, firm but kind, understanding, hopeful, tender, cheerful, and upright. Per-

haps the first recognition of variations in a doctor's personality is Haslam's admission that he lacked the lightning in his eye, the thunder in his voice, and the majestic bearing that some considered requisite for the ideal psychiatrist.

Physicians recognized that therapeutic acumen was something of an art. Haslam said that only by trial and error could the doctor hope to acquire what we today would call an effective psychotherapeutic approach, and that this could not be taught and therefore would perish with the individual doctor. Because of this difficulty in communication, it is likely that each doctor developed more techniques for dealing with his patients than appear in the literature. Both Cox and Haslam stressed that before he could hope to gain the confidence and respect of the patient the doctor must learn to control himself and not become agitated or upset. Trotter pointed out that this control was difficult for a young doctor to learn, and that he needed knowledge about human nature and extensive study of living man before he could develop this art. Burrows stated that tact was the pivotal factor in the doctor-patient relationship, and that it was an intuitive art that could not be taught, although it might be elicited by chance and then developed by experience. He also stressed the need for delicacy and the value of intelligence in approaching the patient.

Allen seems to be the only doctor of this period to recognize and write about the doctor's personal response to his patients. He recorded a case of a woman who so exhausted him emotionally that he himself became depressed and was forced to transfer her to the care of his wife. This woman also overwhelmed his wife at times, so that Mrs. Allen was forced to threaten her with separation and transfer unless the patient stopped complaining.

DISCUSSION

The various therapeutic approaches discussed here arose from associational or sensational psychology, from the older faculty psychology and its newer modifications by the Scottish philosophers, and from humanitarianism, romanticism, and phrenology, to name only some of the more obvious

sources. From the depths of each doctor's individual personality came methods peculiarly applicable to one or more types of emotional disturbance.

Although we have not attempted to study the literature on the milder psychiatric diseases, we have found evidence that certain doctor-patient concepts were employed in this area before being applied in what we today would term psychoses. Since some of the techniques can be traced to the Greeks, one may ask what is novel, by 1840, in the doctor-patient relationship. The answer seems to lie in the trend towards increasingly complex but more explicit psychotherapeutic methods which are meaningful to the psychotherapy we practice today.

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LATE RESULTS OF ORBITAL UNDERCUTTING

Report of 76 Patients Undergoing Quantitative Selective Lobotomies¹

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Since 1948, when the writer first proposed cortical undercutting(1) as a method of interrupting cortical connections from various surface areas of the frontal and temporal lobes, he has performed the selective leukotomy operation of "orbital undercutting" of the frontal lobes on 94 private patients and 41 state institutional patients in Connecticut. They constitute two distinct categories of patients both in the malignancy of their mental illness and in their cultural backgrounds. Previous reports have been made on the early results in various diagnostic categories, ranging from benign psychoneuroses to malignant schizophrenic psychoses(2, 3, 4, 5). Observations have been published on certain physiologic changes resulting from stimulation and destruction of anatomic areas within the frontal and temporal lobes(6, 7). Presentation is now made of the late results of orbital undercutting, an operation which has largely replaced other selective operations in the author's hands.

HISTORICAL

Trends and cycles in psychiatric treatment, as in clothes, change inexplicably. In the latter half of this century, the organic Kraepelin school has successively been followed by psychoanalysis, shock therapy, lobotomy, and, more recently, by newer drugs and chemotherapies. The results in each have been encouraging but the public's acceptance has waxed and waned in a manner quite lacking in objectivity. Probably the greatest benefit of the surgical, electrical and chemical therapies has been a luring of psychiatrists back to the organic medical fold from those Freudian fields of mystic environmentalists. Although at present in both America and Britain, psychosurgery is in temporary eclipse to ever newer trends in drug therapies and certain

shock therapies, the writer believes that psychosurgery continues to have a very definite place in the treatment of mental disease.

Drug therapy has definite limitations in the more intractable emotional and psychotic disturbances. Shock treatment is largely limited to use in depressive diseases; it fails to prevent recurrences in these depressions; it may increase anxiety, tension and somatic symptoms in the chronic neuroses; and it is unsafe in the elderly age group. Emphasis is made on the permanent sequelae of insidious mental blunting and measurable memory loss resulting from repeated courses of shock treatment, exactly similar to those changes seen in the recurrent brain injuries of prize fighters and other accident prone individuals. All too frequently these late effects are blamed on the natural course of the patient's disease.

Complete lobotomy has been largely replaced by limited selective operations, especially in the benign psychoneuroses and depressions and in those schizophrenic patients possessing higher cultural backgrounds(8-14). The classical standard lobotomy or leukotomy is now advocated only in deteriorated schizophrenic patients of low cultural level requiring continuous restraint and nursing care. Even in such cases selective undercutting of the superior convexity of the frontal lobes gives a comparable benefit with less personality blunting(1). However, the principal application of selective lobotomies is in the neuroses, depressions and certain senile states. Such selective lobotomies, especially orbital undercutting, are now advised by the author as the treatment of choice in those recurrent depressions requiring more than a limited course of shock treatment; in seriously disabling anxiety-tension states; in intractable obsessive-compulsive syndromes without excessive narcissism and egocentricity; and in certain anxious, agi-

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tated elderly people; this latter group giving unexpectedly gratifying results.

OTHER OPERATIONS

The chief criterion for the type and location of the newer selective operations should be a maximum of improvement with a minimum of personality deficit, using a technique which can be exactly duplicated from patient to patient. Bilateral medial quadrantic sectioning or electrocoagulation (14, 8) satisfies the first criterion very well, but precise duplication is difficult because of a blind sectioning of internal white matter containing concentrated bundles of fibres, using electric or chemical agents without measurable control over the spread of destruction. The transorbital lobotomy of Fiamberti (15) and later Freeman (16), in spite of its extreme simplicity, is undesirable in the more benign illnesses because of its complete lack of precision. When done, it should be performed by surgeons and not psychiatrists. Bilateral fractional ablations of the medial temporal lobe (5) have not shown sufficient benefit to warrant their use in mental illness and may cause memory loss (17). Certain psychosurgeons have stressed the role of the rostral cingulate area and its effect on obsessive-compulsive thinking. Cairns (18) and more recently Lewin (19), LeBeau (9), Livingston (20) and Ward (21) have done modified undercutting or resections of this area. The writer, in more extensive interruptions of the rostral cingulate cortex, failed to note an appreciable specificity (1). In the more malignant psychoses occurring in well preserved personalities, the writer has advocated undercutting of the superior convexity (1), an operation duplicated in later years by McKissock (10) with his rostral leukotomy and Pool (22) with his bimedial prefrontal lobotomy.

However, to an increasing degree, the writer has limited his psychosurgery to the operation of orbital undercutting because of its simplicity; the absence of personality blunting; the preservation of adjacent and deep blood supply, and most particularly because of the ability to duplicate in successive patients, under direct vision, a quantitative sectioning of connections from measured surface areas. It is gratifying to

know that distinguished surgeons of the British school, especially Northfield (23), Lewin (12), and Knight (24), and of the Scandinavian school, Busch (2) and Sjoqvist (2), have reached similar conclusions in their advocacy of this procedure, called in England orbital leukotomy, in Sweden orbital undercutting, and in Denmark orbito-medial leukotomy.

CASE SELECTION

The writer, in preparing for this address before the Royal Society of Medicine some 10 years after his initial presentation on "Cortical Undercutting" has elected to review the late results of those cases limited to orbital undercutting and omitting mental defectives. Out of 92 private patients, 42 have been followed for more than 4 years (an arbitrary minimum in order to permit studies on approximately 50 patients), a maximum of 11 years and an average of 6.2 years. Of this "late follow-up" series, 12 had malignant schizophrenic types of psychoses, 30 had benign; and from this latter group all patients over 65 years of age were additionally studied in a separate category. Specifically, they fall within the categories of schizophrenia (5 cases), pseudoneurotic schizophrenia (7 cases), depressions (14 cases), neuroses (16 cases), and "elderly" (14 cases). The majority of these patients were operated upon on the private neurosurgical service of the Hartford Hospital and discharged to their homes. They represent patients of some private means from appreciably high cultural backgrounds. The writer has elected to separate this group from that of 34 cases of schizophrenic patients followed over a 10-year period in 2 state mental institutions. It was expected that the late results would be poor in this latter category, as they were derived from patients of poor economic and cultural background, often seriously deteriorated, and without facilities for care or rehabilitation outside of institutions. Follow-up reports have been obtained from members of the immediate family or supervising physician following direct telephone communication, printed questionnaires, and personal examination in the majority of private patients. Much difficulty was encountered because of a scattering of such

patients following operations to the far corners of the United States.

In age and sex groups, the institutional and private categories were roughly comparable, the schizophrenic and pseudoneurotic schizophrenic patients being relatively young with an average of 34 years and three-fifths undergoing operation under the age of 40. The psychoneurotic patients were in the middle age group with an average of 54 years and two-thirds above the age of 40. The depressed patients were older, averaging 64 years, all of them being operated upon over the age of 40, and the "elderly" group averaged 72 years, no case being younger than 65, the majority in their 70's and three in their 80's. Complications and physiologic observations were recorded on a total series of 128 cases undergoing orbital undercutting.

RESULTS

Psychiatric—(See Tables 1 and 2). The results are tabulated under the headings of 1. "Marked benefit," constituting a clinical cure or marked improvement, permitting the patient to live at home and return to his former occupation; and 2. "Significant benefit," constituting moderate improvement, marked improvement or clinical cure, as described by relatives and supervising doctors (described in more detail in an earlier publication⁽²⁾). Two other headings have been added in Table 1 to indicate a progression or regression in improvement over the years of study. "Early" follow-up studies were made between the 3rd and 12th months postoperatively.

The "late" results (Table 1) in the private group of patients revealed a satisfactory and significant improvement in all diagnostic categories with certain unexpected variations. The best late results occurred, to our surprise, in the schizophrenic group. All 5, or 100%, showed a marked benefit as compared to 20% with early benefit. This was confirmed to a less dramatic degree in the state hospital cases. The depressions and "elderly" states closely approximated this excellent result, showing 93% and 86% respectively having marked improvement as compared to 64% and 50% in the early results. The psychoneuroses and pseudoneurotic schizophrenic groups

had an appreciably lower percentage of marked improvement, being 63% and 57%, respectively, but again increased considerably over the early results. In fact, the pseudoneurotic schizophrenics showed the same degree of dramatic increase in late benefits as did the schizophrenic categories. If one is less demanding in one's evaluation, using moderate or "significant" benefit rather than a marked benefit in classification, all 5 categories are in reasonable approximation to each other, ranging from 71% to 93%. Here again the psychoneuroses proved more intractable than schizophrenics.

Although the number studied in each category of private patients is admittedly too low for great statistical significance, the *continuing* improvement of all patients over our 4 to 11 year studies and the especial and unexpected late benefits in all 46 schizophrenic patients is deemed statistically significant. The writer anticipated regression in some one-half of all cases, especially in the schizophrenic patients. This proved not to be the case, total late "marked" benefits being nearly double that of the early (76% as opposed to 40%). The schizophrenic patients lead in late improvement, increasing from 20% to 100%. The depressions and all "elderly" states were a close second, and it is gratifying to observe the absence of a single appreciable relapse in the depressive patients over a 4 to 10 year follow-up. Obsessive-compulsive psychoneuroses and schizophrenic patients with predominantly neurotic overlays proved the most intractable. In studying the diagnostic categories in relation to an advance or a regression from the original improvement, all showed a preponderance of the patients advancing. Relapses to a significant degree occurred only in the obsessive-compulsive symptomatology.

In studying the 34 cases of schizophrenic patients of the lower economic and cultural scale committed to two state institutions, a similar unexpected late improvement occurred. In fact, in one of the two institutions the late results showed 6 times as many patients exhibiting marked improvement. Orbital undercutting, when performed on schizophrenic patients within state hospitals, resulted in "significant" late benefit

TABLE 1
PRIVATE PATIENTS
RESULTS

Diagnostic Category	No. of late follow-ups (average—6.2 years)	Average age (in years)	MARKED BENEFIT OR CLINICAL CURE		"SIGNIFICANT" BENEFIT **		Advance from original improvement	Regression from original improvement
			Early	Late	Early	Late		
Schizophrenia (9 patients)	5	34	1 (20%)	5 (100%)	3 (60%)	5 (100%)	5 (100%)	0 (0%)
Pseudoneurotic schizophrenia (11 patients)	7	34	1 (14%)	4 (57%)	4 (57%)	5 (71%)	4 (57%)	1 (14%)
Psychoneuroses (37 patients)	16	54	6 (38%)	10 (83%)	16 (100%)	12 (75%)	8 (50%)	6 (38%)
Depressions (35 patients)	14	64	9 (64%)	13 (93%)	13 (93%)	13 (93%)	6 (43%)	1 (7%)
Total patients 92	42	47	17 (40%)	32 (76%)	36 (86%)	35 (83%)	23 (55%)	8 (19%)
Elderly* (29 patients)	14	72	7 (50%)	12 (86%)	13 (93%)	12 (86%)	7 (50%)	2 (14%)

*Note: Omitted from the total inasmuch as they are duplicated under Psychoneuroses and Depressions.

**Note: "Significant" benefit represents all patients showing moderate or marked benefit or clinical cure.

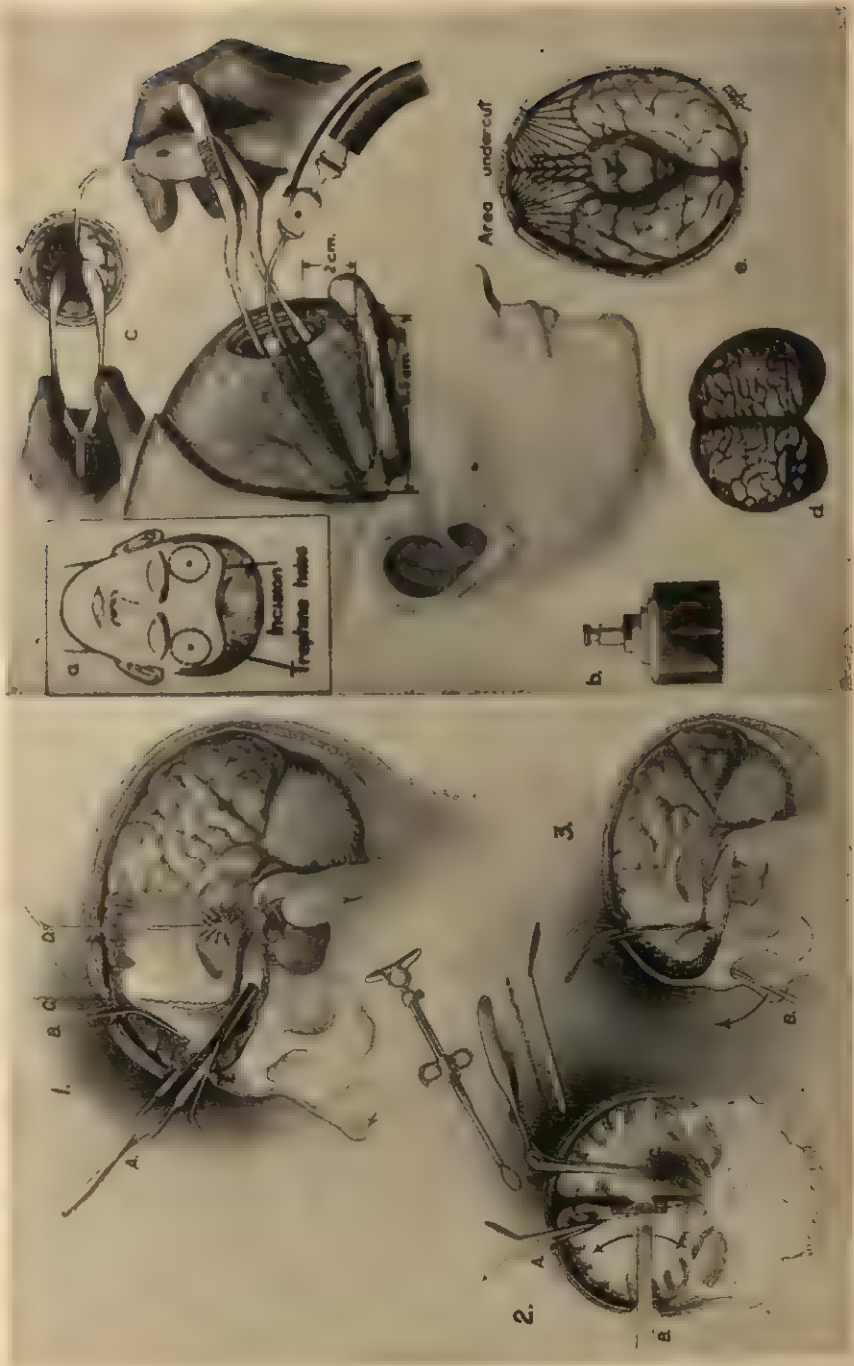


FIGURE 1

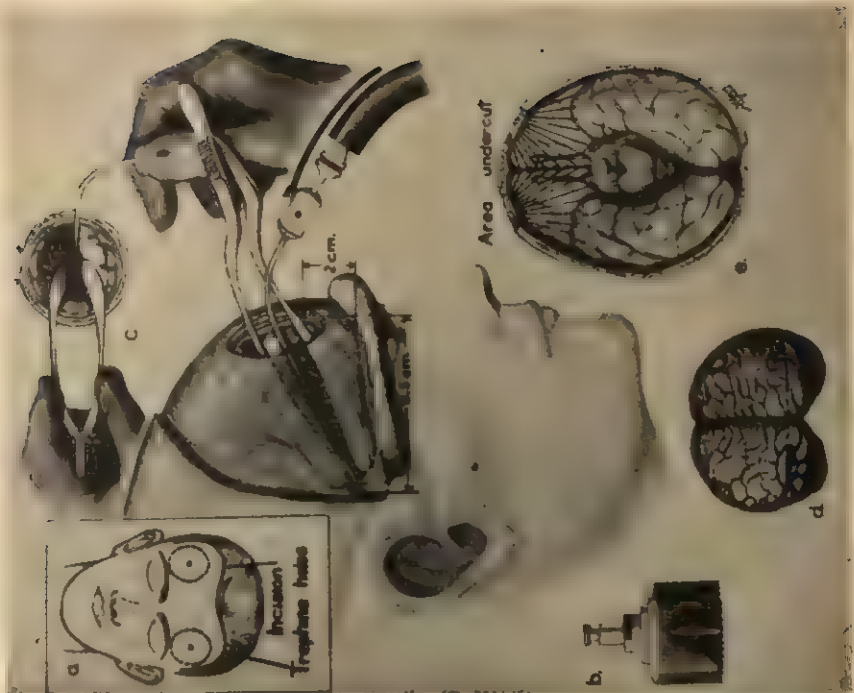


FIGURE 2



FIGURE 3

ILLUSTRATIONS

Figure 1. Various forms of selective lobotomies.

1. A. Scoville's orbital undercutting. B. Scoville's undercutting of superior convexity. C. Grantham's electrocoagulation of inferior medial quadrant. D. Spiegel and Wycis' stereotaxic electrocoagulation of thalamic nucleus.

2. A. Scoville's cingulate gyrus undercutting. Livingston's cingulate gyrus sub-cortical sectioning. B. Freeman and Watts' "closed" standard lobotomy. C. Medial inferior quadrant section by McKenzie's leucotome method, Schwartz' nasal speculum method, Grantham's electrocautery method, and Poppen's direct vision suction and spatula method.

3. A. Lyerly and Poppen's "open" standard lobotomy under direct vision. B. Fiamberti and Freeman's transorbital lobotomy. Arrows indicate deep frontal cut. Line hatching indicates Pool's original topectomy of 9 and 10. Dotted hatching indicates his present topectomy of the superior and inferior tips of the frontal lobes.

Figure 2. Illustration of orbital undercutting.

Figure 3.

Left upper illustration : Vertical lines illustrate area of cortex and cingulate gyrus undercut in the operation of rostral cingulate gyrus undercutting.

Right upper illustration : Illustrates standard orbital undercutting operation.

Lower illustration : Illustrates wrong undercutting extended superiorly into septal area, resulting in loss of consciousness, seizures and later bizarre confusional state. Horizontal lines illustrate cingulate gyrus, corpus callosum and fornix, respectively.

TABLE 2

STATE HOSPITAL CASES, 10 YEAR FOLLOW-UP ON
SCHIZOPHRENIC PATIENTS

	Cases	Average Age	Marked Improvement		"Significant" Improvement (moderate and marked)	
			Early	Late	Early	Late
Conn. State Hospital	18	34	6 (33%)	11 (61%)	13 (72%)	15 (83%)
Norwich State Hospital	16	43	1 (6%)	6 (38%)	6 (38%)	11 (69%)
Total	34	39	7 (21%)	17 (50%)	19 (56%)	26 (76%)

in 76% and "marked" late benefit in 50% of patients. This compares very favorably with the results of other more radical lobotomy operations.

In summation, in the study of 42 private patients followed from 4 to 11 years, with a separate study of 14 "elderly" patients found in the depressed and psychoneurotic groups, the late results were superior in the categories of schizophrenia, depression and the "elderly," averaging 100%, 93% and 86%, respectively; while the psychoneuroses and pseudoneurotic schizophrenics showed 63% and 57%, respectively; or an overall average of 76% with "marked" benefit and 86% with "significant" benefit. Although showing much less overall benefit, patients in the lower economic and cultural range showed an equal amount of late over early improvement.

A warning should be given as to the necessity of using a very conservative degree of undercutting in the older age groups, in order to prevent personality deterioration(3, 7). When conservatively performed, these elderly patients appeared in better contact with their environment, with a restoration of sleep rhythm, cheerfulness and social outgoingness not previously present; indicating that their pre-operative psychopathology was not due to simple aging. It should also be pointed out that psychoneurotic patients suffering from anxiety, tension and real emotional suffering do much better, both early and late, than those with rigid personalities exhibiting much narcissism, egocentricity, and masochistic enjoyment of their ritual pat-

terns. In these latter patients, orbital undercutting brings out their underlying selfishness to a distressing degree.

PHYSIOLOGIC RESULTS AND COMPLICATIONS

A review of the late results of orbital undercutting showed little changes from those described in earlier papers(1). Actually, all complications occurred in the early stages. In recapitulating them, it should be stressed that the majority occurred in elderly persons. There were two deaths in 93 persons, one from cardiac failure on the first postop day in a patient 76 and one on the second postop day following a convulsion in a patient of 66 years of age. One 83-year-old patient showed a marked one-day improvement followed by a sudden confusional and stuporous state thought to be due to thrombosis. Two elderly patients fell out of bed, one suffering a fractured hip and the other an intracerebral clot requiring secondary evacuation and lobectomy with deterioration thereafter. These unfortunate occurrences have resulted in our placing all elderly post-operative lobotomy patients in a net cage (25) fastened over the bed for the first 24 to 48 hours, unless special nursing care is available.

When pseudoneurotic schizophrenic patients undergo selective lobotomies, relatives and physicians must be warned in advance of the possibility of bringing to the surface underlying schizophrenic symptoms. Such patients apparently cloak their psychotic delusions in an obsessive-compulsive or somatic conversion overlay. Provided

there is advance warning, lobotomy appears justified, inasmuch as it enables the patient to ventilate his underlying delusions and make better contact with society. In only one case was a later commitment found necessary, and that only after a 10-years' interlude.

There were no infections. There were three blood clots requiring open drainage, one following a fall from bed. Urinary incontinence and temporary confusional state has been largely absent, in comparison with certain other lobotomy patients.

Convulsions: In attempting a 10-year follow-up in the state hospital cases, great difficulty was encountered in obtaining an honest tabulation of isolated convulsions, largely because of neglect of anti-convulsant medication in deteriorated patients and proper recording by ever changing personnel. However, in this series, 29% of 42 had one or more eventual seizures. In a series of 121 private patients, of which 52 were followed an average of 6.2 years, there have been 7 (5.7%) known patients who developed isolated seizures more than one week postoperatively. Only one of these patients had more than one seizure, indicating easy controllability by dilantin; and only one patient had seizures more than 4 years postoperatively, the others occurring in the first, second or third postoperative years. An additional 6 patients had seizures within the first day after operation without later recurrences, attributed to a too radical extension of the undercutting upwards and posteriorly into the septal area, a known epileptogenic area(7).

The physiologic effects of orbital undercutting have been described in previous papers. Of both scientific and therapeutic importance has been the observation that the uncus area as well as the septal area is sharply epileptogenic. Damage to the septal area may affect adversely states of consciousness and/or confusional states, such occurring in 5 out of 121 patients undergoing orbital undercutting(7). Hence, caution is urged against too radical posterior or superior extension of the orbital undercutting, especially in elderly persons. The line of cleavage must lie exactly at the junction of grey and white matter as one approaches the optic chiasm.

DISCUSSION AND CONCLUSIONS

In reviewing late with early results of orbital undercutting, the writer is of the impression that selective lobotomies, especially when utilizing the precise method of cortical undercutting, continue as procedures of great merit in the treatment of both benign and malignant mental disease. The newer drugs and electric shock cannot yet replace them in the treatment of the more intractable neuroses, recurrent depressions, senile agitated states and certain schizophrenic patients of high cultural background. They offer the advantage of greater intensity than drug therapy, and of fewer relapses than offered by shock therapy. As demonstrated in earlier studies, the results in depressions have been little short of dramatic; the results in certain intractable obsessive-compulsive neuroses and in anxiety-tension states, especially in the aged are more than satisfactory; and similarly drug addiction and alcoholism when due to panic, anxiety or social discomfort are markedly benefited. Caution must be given against using this operation for persons having constitutional psychopathic personalities especially those showing criminal or alcoholic tendencies, as well as for persons showing those obsessive-compulsive traits overlying extremely narcissistic and egocentric personalities. Epileptic seizures appear to occur in the early postoperative years and can be easily controlled by dilantin therapy when occurring in cooperative persons not already deteriorated.

Unexpected results of a progressive and ultimately superior benefit followed orbital undercutting in schizophrenic patients derived from high cultural backgrounds. Neither depressive nor elderly patients have shown appreciable relapses in long-term studies. The psychoneurotic patients of the obsessive-compulsive type have proved more intractable, with more variability and more relapses. The category of pseudoneurotic schizophrenia in younger age groups is not uncommon, and underlying malignant schizoid symptoms are obscured by a superficial constellation of both obsessive and compulsive symptomatology. The neurotic overlay can be removed by

orbital undercutting bringing to the surface deeper psychopathology.

In a study of the psychopathology following section, stimulation or resection of various areas of the frontal and medial temporal lobes, the writer must conclude that interruption of surface areas only indirectly affect the fundamental mechanisms of mental disease and, with the exception of depressions, the benefit by selective leukotomy lies more in a blunting of higher sensitivities than in a changing of disease patterns. In the future, it is hoped that stereotaxic, ultrasonic or chemical approaches may be found to the deeper midline, diencephalic, limbic and reticular systems. Unfortunately, to date lesions made in such areas produce rather than alleviate psychotic delusional and affective aberrations.

SUMMARY

1. Psychosurgery continues to have definite applications, especially in the involutional and cyclic depressions, the agitated states of the elderly, the better preserved schizophrenics, and the intractable psychoneuroses, especially when suffering from anxiety or tension.

2. It is preferred to shock treatment in those depressions requiring more than short courses of shock treatment because of less emotional blunting, memory loss and relapses.

3. Agitated depressed senile states react more favorably to limited lobotomy operations than those in the younger age group.

4. Complete lobotomy has been replaced by limited selective operations. Undercutting of the orbital cortex offers the advantage of a precise technique under direct vision in an area causing appreciable lift in mood, lessening of anxiety and a minimum personality blunting.

5. The late results in orbital undercutting when studied in the separate categories of depressions, agitated senile states, schizophrenia, pseudoneurotic schizophrenia and intractable psychoneurosis have in most cases continued to show an improvement rather than regression or relapse. It has done so to a far greater degree than was anticipated, especially in schizophrenic patients of high cultural background.

6. Complications, including seizure for-

mation, occur in the early rather than the late follow-up studies.

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COMPARATIVE CLINICAL EXPERIENCE WITH FIVE ANTIDEPRESSANTS

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Clinical and non-clinical reports, too numerous to list, have appeared describing the actions and uses of the newer antidepressants. In general, these reports agree that the drugs are effective; many also indicate that they are superior to the amphetamines and tranquilizers in specific types of depression. In view of these reports, we decided to undertake a study of 5 of these new drugs to compare their effectiveness in hospitalized, depressed patients. The drugs chosen were: isocarboxazid (Marplan); nialamide (Niamid); phenelzine (Nardil); pheniprazine (Catron), (all monoamine oxidase (MAO) inhibitors); and imipramine (Tofranil)-(a non-monoamine oxidase inhibitor).²

Since it is generally recognized that precise diagnostic classification of depressed patients is difficult, we decided to select patients in accordance with Lehmann's(1) definition of the depressive syndrome which is based on the following triad of primary symptoms: a sad, despairing mood; a decrease in mental productivity; and a reduction of drive and retardation (or agitation) of expressive motor responses. In addition to these primary symptoms, attention was also given to various secondary symptoms (see Table 1). Moreover, because some investigators(2, 3) believe that clinical response to antidepressant therapy occurs through the control of symptoms resulting from induced biochemical alterations rather than from true reversibility of the basic cause of the depressive disorder, we decided to use the patients' pre- and post-treatment symptoms as a direct measure of the drugs' activity.

In all, 134 patients were selected, but only 100 (20 patients on each of the 5 drugs) completed the evaluation; 28 were dropped because they received concomitant treatment with either a tranquilizer or

TABLE 1

SYMPTOMATIC CHECK LIST

Psychic Symptoms

Despondent Mood
Psychomotor Inhibition
Lack of Interest-Initiative
Pessimism, Hopelessness
Self-Reproach
Delusions of guilt-unworthiness
Suicidal thoughts
Tendency to remission in eve
Anxiety
Agitation
Poor insight into condition
Obsessive compulsive features

Somatic Symptoms

Insomnia
Anorexia
Fatigue
Weakness
Constipation
Gaseous distention
Abdominal Pain
Urinary Frequency
Headache
Shortness of breath
Palpitation
Tachycardia
Parathesia
Anal Pruritis
Vaginal Pruritis

ECT; 4 because they refused to take medication; and 2 died from organic causes unrelated to drug therapy. Diagnostically, the patients represented a relatively heterogeneous group (Table 2), but all possessed sufficient primary and secondary symptoms to indicate a well-established depressive syndrome. Of these patients, 62 were women and 38 were men; 80% of them were between the ages of 25 and 35 (range of ages: 18 to 72 years).

METHOD AND MATERIAL

Prior to receiving any of the drugs, all the patients underwent a complete physical examination; laboratory tests, including a CBC, urinalysis, alkaline phosphatase,

¹ Embreeville State Hospital, Embreeville, Pa.

² We are grateful to the various pharmaceutical companies for supplying generous supplies of their individual products.

TABLE 2
DIAGNOSTIC CATEGORIES

	No. of Patients
<i>Depressive Reactions</i>	
Psychotic	6
Neurotic	14
Manic-Depressive-Depressed Type	15
Involuntal Psychotic	15
<i>Schizophrenic Reactions</i>	
Paranoid	15
Catatonic	6
Acute Undifferentiated	3
Chronic "	4
Other	2
<i>Organic Brain Disorders</i>	
Chronic Brain Syndrome associated with Cerebral Arteriosclerosis	4
Chronic Brain Syndrome associated with Circulatory Disturbance	2
Chronic Brain Syndrome associated with Central Nervous System Syphilis	4
Chronic Brain Syndrome associated with Convulsive Disorder	4
Chronic Brain Syndrome associated with Intoxication	1
Acute Brain Syndrome associated with Alcohol Intoxication	5
TOTAL	100

cephalin flocculation, serum bilirubin, and urine urobilinogen, were done on all patients. In addition, each patient was interviewed to determine his current mental status, and to allow completion of the symptomatic check list (Table 1). Patients were assigned to one of the drugs in rotation until equal numbers of patients from each of the

broad diagnostic categories had been placed on each of the drugs.

All medications were administered orally in accordance with the dosage schedules shown in Table 3. Initial doses were given for two weeks and, if no significant symptomatic improvement was noted, were gradually increased by unit-dose increments at intervals varying from 2 to 6 days until the maximum dose was reached. Maximum doses were given for 2 to 4 weeks, at which time the dose was decreased to a level (maintenance dose) which produced continuous symptomatic improvement. When the maintenance dose was given for 3 or 4 weeks without producing additional improvement, the dose was reduced to a level (minimum dose) which kept the patient from relapsing. The minimum dose was then continued for at least 2 weeks, after which time the patient was evaluated to determine the degree of improvement that had occurred. Blood pressure measurements were made daily during the first week of drug therapy, and twice weekly thereafter. Each patient's response to treatment was recorded: 1. Daily, in the progress notes of the ward physicians; 2. Weekly, in interviews with the senior investigator, and in the reports of the nursing staff; 3. Periodically, in reports of the occupational and industrial therapists.

After 16 weeks of treatment, each patient's clinical progress was determined by reviewing the various aforementioned reports. A final interview was conducted to complete a second check list of the

TABLE 3
DOSAGE SCHEDULES

DRUG	Unit Oral dose (mg.)	Dose Frequency	Daily Doses (mg.)			
			Initial	Maximum	Maintenance	Minimum
ISOCARBOXAZID (Marplan)	10	TID	30	60	30	10
NIALAMIDE (Niamid)	25	TID	75	150	75	25
PHENELZINE (Nardil)	15	TID	30	90	45	15
PHENIPRAZINE (Catron)	3	BID	6	12	6	6
IMIPRAMINE (Tofr�nil)	25	TID	75	200	75	25

depressive and somatic symptoms still present. Patients who were discharged from the hospital prior to the 16th week of treatment received a final evaluation several days before being discharged. Results of treatment were judged as follows :

Maximum Improvement—remission of all symptoms. Patients in this category were either discharged or were considered eligible for discharge.

Marked Improvement—remission of all primary depressive symptoms and considerable relief of secondary symptoms.

Moderate Improvement—partial remission of all or complete remission of at least one-half of the presenting symptoms.

Minimal Improvement—little or no change in the primary depressive symptoms, but a slight to considerable remission of at least one-half of the secondary symptoms.

No Improvement—no change in symptoms, or severe aggravation of the basic psychoses.

Significant levels of improvement included the ratings of maximum, marked, and moderate improvement.

CLINICAL, SYMPTOMATIC AND LABORATORY RESULTS

The patients' clinical response to the various antidepressants, as derived from the daily, weekly and interval reports of the various staffs at the hospital, is shown in Table 4. Because of the small number of patients in each rating category, the results have been "pooled" and are shown as the

number obtaining "Significant Improvement." An inspection of the number of patients in each of the 5 improvement categories indicates that phenelzine produced the largest number of maximum and marked improvements (5 and 7, respectively), while nialamide produced the fewest (1 and 3, respectively); the response to the other drugs was between these extremes. The largest number of failures were observed in patients receiving pheniprazine (5) and nialamide (4).

Results based on the patients' symptomatic improvement are shown in Table 5. With one exception, a review of the effect on individual psychic and somatic symptoms failed to show any really significant differences between the drugs. The exception indicated that imipramine and phenelzine, particularly the latter, afford greater relief of anxiety and agitation than the other drugs. From an overall point of view, phenelzine and imipramine had the greatest effect on relieving psychic symptoms (78.6% and 75.6%, respectively) and somatic symptoms (78.8% and 81.2%, respectively).

Despite the similarity of depressive symptomatology of all the patients, it would appear that individual improvement depended, to some extent, on whether the patient had a primary depressive reaction or depressive symptomatology associated with another psychotic reaction. For example, of the 50 patients of the former type, 39 (78%) obtained significant improvement; 18 (36%) of them were discharged or eligible for discharge. Of the 30 patients with

TABLE 4
CLINICAL RESPONSE TO TREATMENT WITH ANTIDEPRESSANTS

DRUG	ENDOGENOUS DEPRESSIONS		SCHIZOPHRENIC REACTIONS		ORGANIC BRAIN DISORDERS		OVERALL % SIGNIF. IMPROV.
	Number Treated	Number Signif. Improvmt.	Number Treated	Number Signif. Improvmt.	Number Treated	Number Signif. Improvmt.	
ISOCARBOXAZID	10	8	6	2	4	1	55
NIALAMIDE	10	5	6	2	4	1	40
PHENELZINE	11	11	5	3	4	2	80
PHENIPRAZINE	8	6	8	4	4	2	60
IMIPRAZINE	11	9	5	3	4	2	70
TOTAL & AVERAGE	50	39	30	14	20	8	61%
PER CENT (%)	78		47		40		

underlying schizophrenic reactions, 14 (47%) obtained significant improvement; none was discharged or became eligible for discharge. Of the 20 patients with underlying organic brain disorders, 8 (40%) obtained significant improvement. All 5 of the patients whose disorder was associated with alcohol intoxication obtained this level of improvement; one of these patients was discharged.

Within the 3 diagnostic groups, response to treatment was quite similar, regardless of the drug being used. In the group with primary depressive reactions, patients with rather severe retardation and inhibition of expressive motor responses seemed to experience the most definitive remission of symptoms. This was particularly true of patients with involutional psychotic reactions (without severe agitation) and manic-depressive, depressed reactions. Response in patients in whom anxiety and agitation were major symptoms was inconsistent. The response of patients with hyperactive tendencies was often preceded by increased restlessness and other manifestations of the neurosis or psychosis. Patients in the group with primary depressive reactions generally exhibited initial symptomatic improvement at the end of 2 weeks, and optimal improvement between 4 and 6 weeks. As would be expected, there were exceptions to this generalization in both directions. Some of the patients, particularly those with involutional or manic-depressive, depressed reactions, responded sooner than two weeks. Regardless of the diagnosis, patients with histories of recurrent depressive episodes and who had

become increasingly resistant to previous treatment with either ECT or phenothiazines, responded to treatment more slowly, and it was not uncommon for them to remain unimproved until they had been on a drug for 4 to 6 weeks. Initial improvement, however, was of the same character as that noted in the more responsive patients; optimal improvement in these patients usually occurred between the sixth and eighth week of treatment.

The degree of improvement in the group of patients with underlying schizophrenic reactions was not, as previously mentioned, as great as that in the group with primary depressive reactions. Although patients in the schizophrenic group with catatonic reactions seemed to derive the most benefit from treatment, their response was still somewhat unpredictable. For example, all of these patients experienced some improvement, but half of them demonstrated agitation, hostility and mild accentuation of schizophrenic symptomatology as the depressive symptoms were relieved. Patients with paranoid or undifferentiated types of schizophrenia exhibited some improvement in mood, less apathy and somatic symptomatology, usually without accentuation of their underlying disorder. For this entire group, 3 to 6 weeks of treatment were required before any signs of improvement were noted; optimum improvement generally occurred within 6 to 9 weeks. As stated earlier, these patients required maximum doses of the drugs and it was usually on these doses that optimum improvement was noted. If activation or accentuation of the

TABLE 5
SYMPTOMATIC IMPROVEMENT

DRUG	Average # of Subj. Symptoms/ Patient		Average % Improvement	Average # of Somatic Symptoms/ Patient		Average % Improvement	% Total Improvement
	Before Therapy	After Therapy		Before Therapy	After Therapy		
ISOCARBOXAZID	6.2	1.8	71.0	3.3	1.15	65.1	68.9
NIALAMIDE	4.75	2.25	52.6	2.25	.95	57.8	54.3
PHENELZINE	5.6	1.2	78.6	2.6	.55	78.8	78.7
PHENIPRAZINE	4.25	1.4	67.0	2.4	.90	62.5	65.4
IMIPRAMINE	5.95	1.45	75.6	3.2	.60	81.2	77.6

underlying disorder were to occur, it too occurred on the maximum dose and prompt reduction in dosage was mandatory.

As might be expected, response to treatment was poorest in the group of patients with organic brain disorders. Improvement was limited almost entirely to those who had an acute disorder associated with alcohol intoxication; initial improvement in these patients was seen during the first week of treatment. Initial improvement in the remaining patients with organic disorders was difficult to determine. It seemed to occur somewhere around the third or fourth week of treatment, but never became pronounced enough to affect the patients' general activity. These patients appeared to become a little more active and less hostile, but as this occurred they also tended to become confused, agitated, anorectic and have memory disturbances. In all probability, the concentrated attention the patients received while the study was being conducted contributed to their limited improvement as much as therapy.

Additional efforts to delineate factors

which might have contributed to therapeutic success or failure of the drugs were inconclusive. A slightly higher percentage of women responded than men, but the margin of difference was too small to be meaningful. Age did not appear to be a significant factor. Excluding the elderly patients with concomitant organic brain disorders, older patients seemed to respond as well as younger ones. However, we discovered early in the study that elderly, chronically depressed patients could not tolerate the same doses of the drugs as younger patients. Concurrent chronic physical diseases had little or no effect on any of the drugs' activity, as evidenced by the relatively large number of patients with cardiovascular disease, arthritis, and diabetes who achieved significant levels of improvement.

SIDE EFFECTS

The drugs produced side effects (Table 6), most of which seemed related to changes in the autonomic and peripheral nervous system. As will be noted from the table, phenelzine and pheniprazine pro-

TABLE 6
INCIDENCE OF SIDE EFFECTS

SIDE EFFECT	ANTIDEPRESSANT				
	Isocarboxazid	Imipramine	Nialamide	Phenelzine	Pheniprazine
Dryness of Mouth	16	9	7	2	1
Constipation	6	5	4	1	3
Nausea	3	4	2	0	0
Vomiting	1	0	0	0	0
Insomnia	10	8	4	4	6
Drowsiness	0	3	2	0	0
Héadache	2	3	3	1	0
Nervousness—Overactivity	3	6	1	0	1
Hyper-Reflexia	2	1	0	0	0
Increased Sweating	1	2	1	0	0
Blurred Vision	1	1	0	0	1
Delayed Micturition	1	1	0	0	0
Abdominal Pain	0	1	0	0	0
Rash—Urticaria	1	1	0	0	0
Postural Hypotension	2	2	1	1	2
Dizziness—Vertigo	2	3	1	0	0
TOTAL	51	50	26	9	14

duced the fewest side effects of any of the drugs. In most patients, side effects occurred during the first two or three weeks of therapy and were controlled by symptomatic treatment rather than by reducing the dose or discontinuing the drug. Small fluctuations in blood pressure were observed in 34 patients, and persistent lowering of systolic pressure below 100 mm. Hg. was noted in an additional 24 patients. Postural hypotension was observed in 8 other patients. Hypotension occurred more frequently in patients with low initial blood pressures and in elderly patients with pre-existing hypertension. When hypotension occurred late in therapy, it was considered an indication of the drugs' cumulative effect.

The drugs also caused side effects which were indicative of cerebral stimulation. Insomnia was frequently experienced during the early weeks of therapy and was usually controlled by giving a sedative at bedtime. Once the depressive symptoms began to subside, the sleep pattern improved and the sedative could be discontinued. We observed that many patients who had insomnia as a secondary depressive symptom developed motor restlessness that was somewhat similar to that observed with some of the more potent phenothiazines. Fortunately these effects were usually transient and could be controlled by administering a mild sedative or an anti-Parkinsonism agent; reduction in dosage was seldom necessary.

No significant abnormal values were encountered in any of the laboratory studies.

Except for an occasional upper respiratory infection or mild gastrointestinal disturbance, no intercurrent illnesses were encountered which required special adjustment in medication.

CONCLUSION

Based on our results, we feel that all 5 of the antidepressants are effective agents and are generally superior to the amphetamines and phenothiazines in producing remission or relief of primary and secondary symptoms which comprise the depressive syndrome. Generally, the best response to the antidepressants occurs in patients with primary depressive reactions. Most patients with depressive features associated with schizophrenia or organic brain disorders experience significant improvement in depressive symptomatology without experience.

No serious complications or side effects were produced by the drugs. Postural hypotension, excessive psychomotor stimulation and aggravation of schizophrenic symptomatology were the most bothersome side effects and it would appear that each drug has a similar capacity to cause these reactions. Neither hemopoietic nor hepatic toxicity was evidenced during our experience with the drugs.

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PROFOUND EXPERIMENTAL SENSORY ISOLATION¹

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The nature and range of psychophysiological phenomena evoked in intact humans experimentally exposed in solitude to an environment which profoundly diminishes absolute amounts of sensory inputs has been suggested by Lilly(1). Lilly and Shurley (2) attempted to define relevant physical, physiological, psychological and social conditions for such experiments. Beginning with Bexton, Heron and Scott in Hebb's laboratory(3, 4, 5, 6), many workers(7, 8, 9) have described effects of minimal or partial experimental interference with sensory inputs, or the normal, varied patterning of these, with or without solitude. Bennett (10) and Camberari(11) have used immersion techniques; their findings are more comparable with those reported here. In an attempt to eliminate further some shortcomings of the early experiments, the author redesigned the apparatus and altered critical aspects of the technique. These modifications are briefly reported here, together with an account of some experimental findings.³

METHOD AND PROCEDURE

At the physical level (Figure 1), we aimed at the provision of a constant environment allowing the maximum achievable reduction of ambient physical stimuli, plus the maintenance of a constant level of those inputs impossible to eliminate, such as temperature. A special two room laboratory was constructed at the Oklahoma City Veterans Administration Hospital. The laboratory enabled us to achieve a marked diminution of light, sound, vibration, odor, and taste inputs. A large tank of slowly

flowing water maintained at approximately 93.5 degrees F. (34.5°C.) provided simulated weightlessness, a uniform tactile field, elimination of body wastes, and other advantages for our purpose. Inspired air was kept at a constant low pressure, at 70°F., a relative humidity of 45%, and free of odor and other pollution. Automatic controls and continuous tape recorders completed a virtual self-operating system requiring infrequent attention.

At the physiological level, we aimed at the absolute elimination of all sources of pain and discomfort from body position, pressure ischemia and hollow viscus distention. The subject was positioned so as to remain comfortable, though motionless, for relatively long periods. He was under instruction to inhibit body movements to the maximum degree consistent with comfort. Design of the mask and breathing system (Figure 2) allowed effortless breathing without reduction of oxygen tension and without carbon dioxide pile-up. Neutral buoyancy of the body was carefully achieved by appropriate, low stimulation placements of weights or buoyant, soft plastic material around the mask or body.

At the psycho-social level, we sought subjects with distinct personal attributes. The experimental situation *per se* required a somewhat self-selected volunteer with presumed ability for sensitive and accurate self-observation, and better than average memory, recall, and descriptive powers. In the experiment the subject needed to assume the role of a relatively passive, self-maintaining sensor, recorder, recaller and reproducer, with free time, motivated to communicate his experience fully, freely, and with minimal omission and distortion to the interested, relaxed, minimally active and minimally coercive experimenter (Figure 3). With these qualities as relatively constant factors, we collected data related to: A. subject variables: sex; occupational identity (lawyers, journalists, physicians, psychoanalysts, technicians, nurses, artists and performers); chronological age (24 to 74); and personality type; B. four con-

¹ Read at the 116th annual meeting of the American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

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ditions, in terms of separation in time and space, of experimenter from the subject in the tank; and C. two alternatives in reporting: immediately following the run, and during the run itself. (Subjects were permitted free choice between alternative conditions of experimenter distantiation, and of reporting.)

Certain considerations seemed relevant at this level, and were observed rigidly. The experimenter and his assistants prepared for the observer role by first using themselves as subjects; the subject was familiarized thoroughly with the experimental conditions by a step-wise series of time-limited runs prior to definitive endurance runs. The identity, and longest times of all subjects were known only to the experimenter.

Strenuous efforts were made to eliminate any suggestion to the subject by project personnel of what might or might not occur. Spontaneous reporting by the subject was encouraged and all queries by the experimenter were general and open-ended in the interviews between the subject and the experimenter. Naturally, the anonymity of each subject and the confidentiality of all personal data were made explicit to the subject and were scrupulously observed. Permission to limit or eliminate participation at any time without prejudice, was specifically granted each subject in advance.

Together, these measures resulted in a state described afterwards by one subject as, "an extremely monotonous state of massive comfort, with built-in confidence and security, yet with an air of fascinating mystery about the outcome."

FINDINGS

Detailed consideration of the manifold aspects of the extensive data is obviously not possible here, and many of the observations lend themselves poorly or not at all to quantitative reporting. A portion of the data are here presented to two ways: first, a condensed, narrative account, much of it in the subject's own words; second, a summary of selected data from many experimental runs by many subjects.

FINDINGS IN ONE SUBJECT

The following is a chronological report from a tape recording of the experience of a 29-year-old married male, college-trained journalist, who desired to write a feature story from first-hand experience, and who felt that the experience might resemble that of the first astronaut.

The familiarization run occurred three days prior to his experimental run and only slightly dampened his enthusiasm, despite the fact that just prior to the run, he unexpectedly panicked when he placed the mask over his head (a thing he previously had done a number of times without undue anxiety). He had to remove and replace the head mask several times before he felt comfortable enough to enter the tank. The experimenter who was standing by, was mildly surprised and reminded the subject that he could stop participation if he wished. The subject declined, however, and once the run started, he continued to its pre-set limit of 3 hours, with the observer in the outside, monitoring position. The familiarization run revealed that the mask leaked badly, and that the tank water at 92°F. was too cold, resulting in chilling. The subject experienced headache and severe stomach cramps, had a vivid fantasy of shopping for a private plane, and was startled to learn that only he had heard dogs barking at one point. He reported afterwards that "that was more peace and quiet than I've ever had by myself," and that he felt unusually calm and relaxed for the remainder of the day. He viewed the total experience as "enjoyable."

EXPERIMENTAL RUN

The subject appeared at the laboratory at 8 a.m. on a Saturday, with a day free of obligations or plans until 7 p.m. His vital signs were normal, and a half-hour saw him launched on his run, with a comfortable mask which leaked considerably less than the one he had used before, yet proved to require self-bailing every half to three-quarters of an hour. He denied anxiety about the mask and expressed great puzzlement as to what had caused his previous panic. With the observation that "the knowledge you are right across that wall impairs the feeling of being alone," he dismissed the experimenter from the immediate scene to a point where he would be available by telephone from 10 minutes away. The subject revealed that he was determined to use his time this day to prepare in his mind an important report and a budget, both due within a week. He elected to report his experience as

it occurred, with tape recorder running. "Everything," he said, "pointed to a 'good' run," and he anticipated a pleasant time.

His first half-hour was spent motionlessly, except for a monologue of his everyday thoughts and concerns. These were: anxiety over a strange and entirely unusual somnambulistic act of his wife's two nights before; guilt over disappointing his boy's expectations of him on that day; curiosity about an unexpected letter from a girl friend unheard from for years; philosophizing about life, and over "What it all means"; pleasure and pride in his job. ("I've got a front row seat at the greatest show in the world!") ; irritation over and disapproval of the attitudes and behavior of the younger generation of journalists. Following each shift of thought, he would digress briefly into some childhood memory associatively connected. In listening to this tape later, the experimenter was forcibly struck by a curious quality about each remark; namely, that each was expressed in ambiguous language that, on a different level, invariably could be construed as a comment on a popular fear about the sensory isolation experience. For the above series, this went as follows: embarrassment at doing something slightly ridiculous or crazy; anxiety over loss of contact with firm ground; regret over failure to establish a good communication link with another in advance; concern over being brain-washed; frustration in the effort to derive some deeper meaning out of the apparently meaningless and ambiguous situation (*i.e.*, the structureless experimental sensory isolation situation) and a turning to the recollection of rich personal sensory experiences enjoyed in the past.

In the second hour his comments concerned his self-thwarted, increasing urgency for "exercise" and physical activity; amazement at his lack of appetite for a cigarette; his state of utter loneliness and solitude, save for "my very real companions, my thoughts and memories"; compassion for the little space-monkey, Sam, who received only half an apple and a glass of water for his dinner after his historic trip 55 miles into space; thoughts of food and sudden, intense hunger pangs.

He whistled, and then sang the refrain from a popular tune which went, "I'll never get rid of that ---, ---, ---!" Apparently he dropped off into a short (less than two minutes) nap; he woke with a start and the eerie feeling he had just been "out of this world," and with a very vivid, "long" dream, which he struggled to recall. He succeeded in recalling only a part—"a sawdust cream cone."

In the third hour he questioned and then

asserted he heard the very faint sound of water trickling (the tape records the sound); asserted he heard dogs barking (not present on the tape); and commented on a "crackling sound" (unable to verify from the tape). At intervals he sang, increasingly louder, the refrain from a slightly obscene ditty which began, "Roll me over—."

Increasingly strong impulses to action came: "I had an urge to make like a porpoise, but those darned hoses (air supply) won't let me!" Briefly, he seemed to be in quite an ebullient, elated mood. Suddenly, he plunged into grief and tears with the expressed thought, "How many people really think about what it's all about? How many people ever, ever think—just once—about love?"

Within seconds, the depressed mood vanished and he was again joking, whistling, and laughing. A make-believe dialogue ensued, as he asked, anxiously, "Joe, what do you do when your engine quits at 200 feet?," and replied, in a peal of laughter, "You land the sonofabitch!"

Immediately following, his tone shifted and he uttered an angry command; "You voice! Keep quiet up there! Quiet!" He, himself, obeyed, and was silent, but only briefly. He hummed. He sang. He sighed deeply. He yawned. He seemed unutterably bored.

His thoughts turned to his plan to compose his report and his budget, and the belated recognition he had not even begun to accomplish this. In a half-hearted explanation to himself, he said "I just allowed my thoughts to drift." Futility and resignation hung from his tone of voice. He then remarked briskly, "I seem kind of wide awake. I ought to get out!" For a period following this, there was more singing, more humming. Then, "I don't know, but it seems like I heard voices. Somewhere. Male voices. Men's voices. Too bad! (laughter) It should have been a bunch of dollies!" He laughed again. More singing came.

In a tone of extreme annoyance, he blurted out, "I might just as well be Sam, for all I can be or do or think or hear or be or smell or taste!"

Over the next 10 minutes he argued himself into the position that he was "just wasting time." "After all, I feel fine." "This is ridiculous" (here he referred to his being a grown man bobbing around in the dark in a tank of water in a hole under the hospital). "Besides" he added, "This run isn't producing any data for the doctor, anyway!"

Again, he commented and questioned whether he really was hearing "some noises."

Abruptly, he pulled off the mask and left the tank.

Over the 4½ hours of his run, his longest mute period had been less than 6 minutes.

In the observer room, he dried, dressed, took his pulse (80), his temperature (98.2°) and respiration (16). He guessed that it was now 12:35, and was elated to discover, on uncovering the clock, that it was 1:00 P.M. He picked up the interview card, and dictated into the recorder his response to the first instruction: Give a spontaneous account of the run.

This one was a calmer thing, from the beginning to the very end. I don't know if you got any material out of it you can really use. I enjoyed this one to a degree. I have no specific recollections, except that I seemed to doze quite a bit at first. I don't believe I dictated as much as last time. I don't feel as subdued as after my first run. I feel like I'd like to go out and hunt bear! I feel more exhilarated, refreshed, and rested than I did after that first one. I'm sorry, I don't have a lot to say. [Apologetically], I noticed I thought a lot about women this time.

In response to the question, why terminate now?, he replied,

I had the feeling there were some things I ought to be doing . . . I don't know now, though, what they were . . . I felt like I was "coming to," and I was getting bored, and it just didn't seem like I should stay. That's why I quit now.

Coincidentally, the experimenter returned to the scene at this point, intending to check the operation of the automatic equipment in the outer chamber, and discovered the subject busily interviewing himself. The experimenter remained, listening passively, while the subject continued his report and occasionally injected, or replied to a question. He noted that the subject seemed unusually buoyant, gay, and energetic. He was amazed to hear the subject calmly report that on several occasions he had seen a brilliant white light, that "looked like the sun through a peep-hole," and once had seen an inverted "V" in brilliant blue and white flame moving through dark space toward him. This occurred about half way through the run. Shortly after this he ex-

perienced an "extremely strong" and persistent feeling that "someone," identified as friendly, had entered the chamber and was "in the room with me." After these and several similar accounts of experiences in isolation, he apologized, "I have so little to offer this time."

As he neared the end of the interview, he waxed increasingly angry. These feelings reached a climax with the vehement assertion, "I honestly believe, if you put a person in there, just kept him and fed him by vein, he'd just flat die!"

One further observation by the subject deserves mention. He commented on what was to him a curious, paradoxical fact. Although he could visualize his complete budget sheet with photographic clarity in his mind's eye (a feat he is incapable of in everyday life) he simply could not "hold on to it and work with it." "Everything I thought of came to mind much more vividly than it would outside, but I simply could not concentrate." In addition, he noted that certain mental images experienced on a previous trial run could be recalled as freshly as if they had just happened.

The post-run interview lasted an hour and a half, during which time he lit one cigarette, but took only one or two puffs (he is almost a chain-smoker in everyday life). He also ignored a proffered cup of coffee, which turned cold on the table before him—a thing he ordinarily would never have allowed.

His buoyant mood and unaccustomed energy persisted throughout the day, and he reported that "nothing else unusual—nothing at all" had occurred when he was queried a week later. However, a colleague of the experimenter's happened to hear him reading a newscast on the evening following the day of the run, and noted that the subject, usually a facile and accomplished speaker, hesitated momentarily and stumbled in pronouncing the words "water" and "Medical Center," but gave no indication of awareness that he did so.

The news feature which he planned remained uncompleted 4 months later.

FINDINGS IN GENERAL

Results under the two alternatives of reporting (*i.e.*, retrospective or both simul-

taneous and retrospective reporting) permit the observation that simultaneous reporting generally was much richer in detail and appeared to inhibit less the revelation of marked deviations from usual feeling states, imagery, and thought content. Retrospective accounts, however, were most revealing. Put another way, the healthy ego seemed to possess an incredible degree of ability to utilize repression and other defensive mechanisms that drastically limited the full reporting of experience. With only an occasional exception, persons having had considerable subjective experience of analytic-type psychotherapy consistently reported fuller and less distorted retrospective accounts of what is called "ego-alien" or "primary process" experience. Subjects with experience as analysts reported even more of this experience and with even less distortion.

No generalizations are possible as yet regarding the effects of temporal and spatial distantiation between subject and experimenter. It was obvious that anxieties of both were significant in determining what was requested and allowed, but other factors also are involved.

For many reasons, the reporting of findings in the area of mental imagery is exceptionally difficult, yet one of the most dramatic findings of these experiments concerns this very area. Mental imagery phenomena, broadly conceived, invariably were present in every run of every subject in our series, although conditions of reporting dictated that in some instances they were inferential, rather than direct. The variety of these experiences defies classification and description. For example, consider how one would classify this: "I strongly felt that I was stirring with my left leg, and it was a spoon in an iced tea glass, just going round and round. I 'came to' with a start to realize that my leg *was* going round and round." By contrast, the following seems easy to classify: "I suddenly saw in the darkness before me a field of golden toadstools, with the sunlight brightly reflected from the stem of one." The latter experience might be described as purely visual, three dimensional, and in color. The subject was able to paint a picture of what she saw. A fuller description of data on

mental imagery soon will be available elsewhere(12).

Under the extreme conditions of our experiment, clear limits of what might be expected (for example, what might be heard) were non-existent. Two physician subjects independently reported having been startled to hear, without benefit of stethoscope, their own heart sounds at ear-filling intensity. One of them reported having heard repeatedly the snapping sound of his own aortic cusps closing at the end of each systole. A third physician subject reported in awe that for the first and only time of his life he heard the gliding sound made by moving his large joints. Such reports, if verified, raise the interesting question of whether they are to be regarded as instances of enhanced sensory acuity, lowering of sensory thresholds, or enhanced ability to fix attention.

There was a general tendency, following a run, for pulse, respiratory rate and blood pressure to drop moderately, and for body temperature to rise slightly, although exceptions were noted. Nine of the 12 subjects made runs exceeding 180 minutes, but none exceeded 400 minutes. Within this range, post-exposure feeling states varied both between subjects, and for the same subject between runs. We saw marked calmness and extreme irritability, buoyancy and lethargy, vigilance and somnolence. Most frequently we observed a peculiar, mixed state characterized by calm, clear mental vigilance, coupled with lethargy, muscular relaxation and a decided disinclination for exercise, but without any sense or sign of fatigue.

DISCUSSION

The single run reported here is not atypical. There are wide individual variations in specific mental content, but much fewer variations in form and sequence of events.

When one takes out light and sound, one perforce puts in darkness and silence; when one takes out change and structure, one puts in monotony and non-structure. When one takes away gravity, a state of weightlessness obtains. Thus, every "negative" state has "positive" consequences. In terms of these consequences, the former (or

negative) state may be far more potent, regardless of how much physical energy input or stimulus is denied. As a matter of fact, for a conscious human, the *absolute* elimination of *any* sensory input, save for special modalities within very narrow limits (e.g., visible light), is impossible, and can be approached only asymptotically.

CONCLUSIONS

A feasible and effective method has been described for studying a wide range of psychophysiological phenomena under circumstances permitting exceptionally effective isolation and demonstration of discrete elements in the complicated, interconnected patterns and sequences underlying even the simplest human act or experience.

A number of hypotheses relating to very fundamental issues can be erected from these observations and can be subjected to experimental testing. In due course, such experiments may contribute to a more adequate understanding of human behavior.

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DISCUSSION

JOHN C. LILLY, M.D. (St. Thomas, Virgin Islands).—The importance of this work seems to lie, not in its testing and extension of research on isolation and confinement in water which I began in 1954, but in the fact that a group is doing profound isolation and confinement in a water immersion situation. It has been my impression, and my published opinion, that this kind of isolation, in which all possible sensory inputs and information exchanges with the physical and social surroundings are reduced towards zero, will be a fertile source of knowledge of the human mind in a short term and in a long term sense.

When this work was initially presented in 1956 in the *Psychiatric Research Reports No. 5* (Lilly) it was inadvertently linked up with a negative aura conditioned by the brain washing milieu in which similar studies were being carried out in the laboratory of Dr. Donald Hebb. It also suffered from being born in an atmosphere of research on mental illness. I do not feel that either of these bedfellows can benefit except by products from the research. The research itself should be on a much broader biological and psychological basis. To put it very simply, our curiosity about the functioning of human minds can be satisfied and intrigued by these techniques as by no others. The amount of information which can be, and is, generated by each subject in these experiments in a few hours can be mountainous and overwhelming, even as it can be by a freely associating person lying on a couch. The advantage of the watertank over the couch is that the conditions are more extremely isolating and there is a

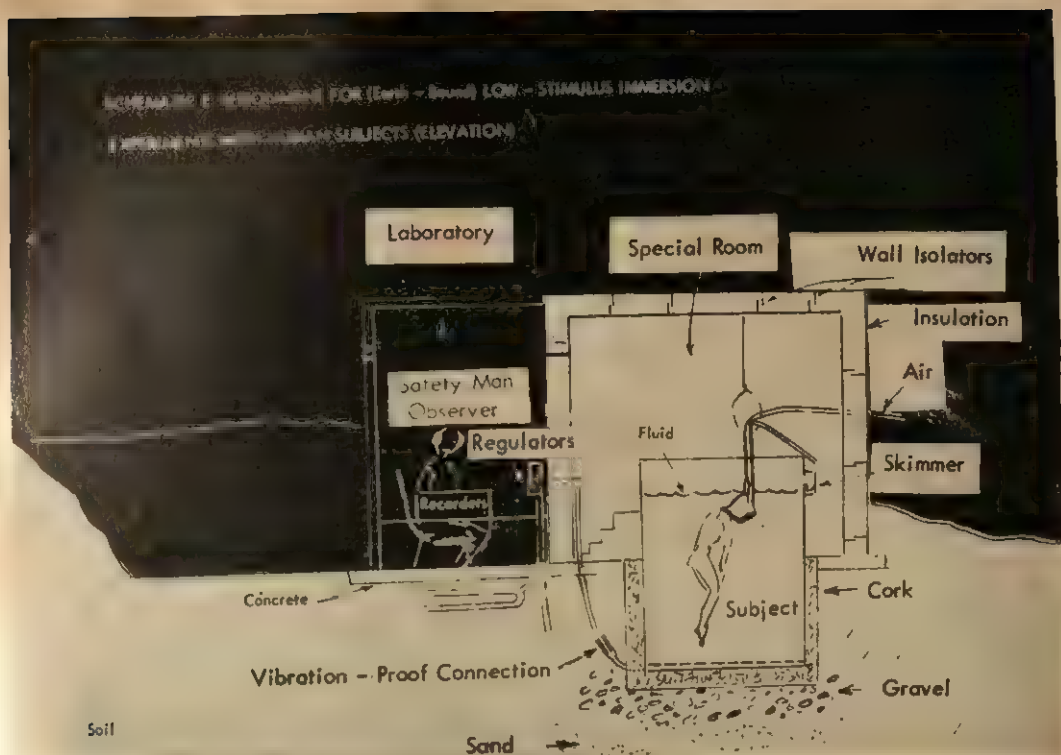


FIGURE 1

SCHEMATIC ELEVATION OF EXPERIMENTAL SENSORY ISOLATION LABORATORY



FIGURE 2

SUBJECT WEARING HEADMASK FOR UNDERWATER BREATHING

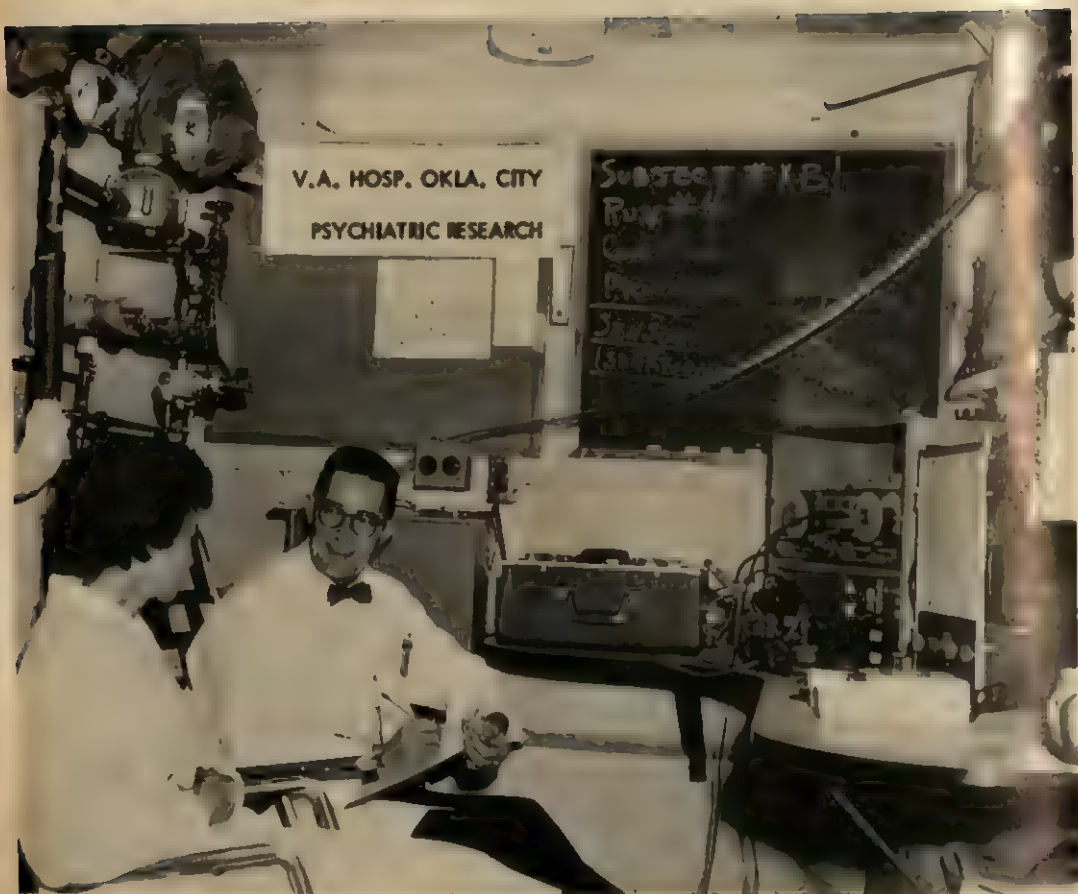


FIGURE 3

THE POST-RUN INTERVIEW. THE AUTOMATIC WATER INPUT CONTROLS AND THE TAPE-RECORDERS ARE SEEN IN THE BACKGROUND IN THE OBSERVER ROOM OF THE LABORATORY

greater degree of true aloneness achievable in the tank. For healthy subjects this has the distinct advantage of lessening the feeling of someone looking over one's shoulder watching one's thinking processes. One can, as it were, really be free of supervision, the necessity of exchanges and the necessity of organization of one's thinking for the purposes and activities of others.

The truly individual aloneness achievable by this method allows one to find out the following basic facts :

1. The human mind is not a solipsistic cesspool of circuitous internal feedbacks. "Pure thought thinking of itself" is not the net result of such work.

2. The human mind in this situation can be seen to be a true source of continuous new information, some recorded in the past but inevitably generating new relationships interwoven with information recently derived from social realities and from the anticipated future.

3. Demonstrations of the portions of the human psyche which are not under the immediate control of one's own self are shown in a dramatic and immediate fashion to those who are ready to see them.

4. In my own experience, and apparently in that of some others, who have been through these experiences (and similar ones in prisons, small sailing vessels and polar huts), one gains an increased awareness of, and a willingness to move with, power, speed and integrity along the lines of one's life situation along which one really and truly wishes to move. The long term effects of repeated satisfactory exposures to these extreme conditions in several cases have been quite rewarding.

In contrast to most other isolation experiments, there seems to be an underlying thread of a reward balance in the reward and punishment account book in the immersion type experiments. Once a satisfying solution to the technical matters is provided for the subject, I found, as have Shurley and Bennett, that the subjects want to repeat their exposures and seek out opportunities to do so. One may ask if addiction might develop. My answer is No, eventually one becomes weaned from such artificial aids for exploring one's mind. In my experience practically everyone who has been through this has been very much impressed with the experience. No one has yet called it trivial.

CLINICAL NOTES

(The Clinical Notes report the findings of the authors and do not necessarily represent the opinions of the Journal.)

THE EFFECT OF R-1625 (HALOPERIDOL) IN MENTAL SYNDROMES: A MULTIBLIND STUDY

H. AZIMA, M.D., H. DUROST, M.D., AND DOROTHY ARTHURS, R.N.¹

Haloperidol² was recently introduced as a "major" non-phenothiazine neuroleptic agent.³ It is chemically not related to any known tranquilizers and is a 4-fluoro-4,1-(4-hydroxy-4-(4'-chloro)-phenylpiperidino)-butyrophenone.

Haloperidol's therapeutic efficacy was tested in a research setting consisting of a "pharmacotherapeutically blind unit," i.e., a hospital service where all drugs are given at random and used blindly, i.e., without the knowledge of the service team made up of one intern, 2 assistant residents, one resident, one psychologist, 2-4 nurses, one social worker and one occupational therapist. An average of 4 drugs and one placebo are tried on this unit at any given time. The final assessment is through the pooling of the opinions of the different members of the team. Because of the use of this "pharmacotherapeutically blind" routine and blind assessment by "multiple observers," the regime is called "multi-blind." The degree of therapeutic efficacy is assessed through a simple rating scale graded from 0 to 4, consisting of two parts (behavioral and experiential) and designed mainly to show the changes in the target symptoms. Only "marked" to "moderate" improvements are taken as significant.

Forty-two patients received haloperidol and 42 placebo. Haloperidol receiving patients consisted of 23 neurotics (5 anxiety hysterics, 3 chronic anxiety states, 2 obsessions, 10 mixed neuroses, 2 depression plus

anxiety, and one character disorder) and 19 schizophrenics (3 simple, 1 catatonic, 14 paranoid and one schizoaffective). Placebo receiving patients consisted of 27 neurotics (1 anxiety hysteria, 4 chronic anxiety states, 4 obsessions, 11 mixed neuroses, 4 depression with anxiety, 2 hypochondriasis, and one character disorder) and 15 schizophrenics (1 simple, 1 catatonic, 12 paranoids and one schizoaffective). There were 27 males and 15 females with an average age of 40 in the haloperidol group and 25 males and 17 females with an average age of 38 in the placebo group.

All patients received the drugs orally with an average haloperidol dose of 6 mgm. daily (maximum 24 and minimum 2 mgm.) with an average duration of 3 weeks (maximum 3 months, minimum 10 days). The regime of drug and placebo administration was that of "gradual increase."

Comparison of the results in drug and placebo groups revealed 38% marked to moderate improvement in haloperidol treated patients, in contrast to 11.8% in placebo treated patients. Out of 23 neurotics treated with haloperidol, 6 (2 anxiety hysterics, one chronic anxiety state, and 3 mixed neurotics) showed moderate and one anxiety hysterics marked improvement; while in 27 neurotic patients treated with placebo, 4 (1 anxiety hysteric, 1 chronic anxiety state and 2 mixed neurotics) showed moderate improvement. Out of 19 schizophrenics treated with haloperidol, 4 showed marked and 5 moderate improvement; while in 15 schizophrenics treated with placebo only one patient showed moderate improvement.

Side effects were relatively numerous and disturbing to the patients. These consisted mainly of extrapyramidal symptoms: body

¹ From McGill University, Dept. of Psychiatry, Allan Memorial Institute and Verdun Protestant Hospital, Montreal, P. Q.

² R-1625 was supplied by G. D. Searle & Company.

³ International Symposium on Haloperidol, Beerse, Sept. 5th, 1959, Les Editions "Acta Medica Belgica," Brussels, 1960.

idity and facial muscle tension in 15, euphoric crises in 2 and generalized tremor and jitteriness in 10. In addition, I. symptoms such as vomiting, nausea, anorexia, etc. were noted in 7 patients, hypotension in 11, weakness and syncope in 9, extreme fatigue and sleepiness in 7, drowsiness in 5, blurred vision in 1 and dysuria in 1 patient. The appearance of extrapyramidal symptoms were directly related to the dosage. Beyond 20 mgm. per day, almost all patients developed these

symptoms. Changes in biochemical studies done once a week (liver function, blood count, transaminase and urine analysis) were minimal.

The final impression was that haloperidol was a moderately potent neuroleptic, much less effective than claimed by European authors, with numerous side effects. However, its greater potency in schizophrenic states indicated the necessity of further studies in this area.

PRELIMINARY REPORT ON MELLARIL IN EPILEPSY

MARIE M. FRAIN, M.D.¹

After concluding a pilot study in which a ward of 50 psychotic geriatric patients became more manageable and less disturbed within a month using Mellaril,² a major project was started for evaluation of its use in severely disturbed epileptics with psychoses. Comparative charts on seizures, behavior, and personality during three time spans were selected for intensive study.

NO TRANQUILIZER PERIOD (1952-1954)

Of the 70 white females chosen, all but 22 had been in the hospital 10 years or more. Behavioral characteristics: belligerence, unpredictability, unkemptness and uncooperativeness. Phenobarbital gr $\overline{150}$ H.S. constituted the only sedative. Many of the individuals required wet packs, cuffs and strait jackets. Wards were noisy and disruptive.

THORAZINE PERIOD (1958-1960)

This same group was given chlorpromazine, 300 to 600 mg. in 24 hours, depending on individual needs. All but 12 (82%) definitely improved physically and mentally. Many received ground privileges, some participated in occupational therapies, and many enjoyed recreation hall facilities. Wards became quieter and patients more easily managed. Wet packs were discontinued and strait jackets and cuffs were discarded.

MELLARIL PERIOD (MARCH 1, 1960 TO THE PRESENT)

Mellaril was begun on the same group with no interim rest period, since without tranquilization, violence would have recurred. The usual 100 mg. t.i.d. dosage of Mellaril was increased for 10 patients to the amount of 150 or 200 mg. t.i.d. at the end of 3 weeks. Rarely have other changes been needed and after 6 months the whole group seem to be adjusting nicely.

RESULTS

All were disturbed while the only sedative was phenobarbital.

TABLE 1
THIORIDAZINE SIDE EFFECTS

Symptoms	Number of Patients
Dry Mouth	1
Extrapyramidal	0
Drowsiness	With dose 400 mg. or more.
Change in Blood Pressure	0
Dermatitis	0
Nausea (slight)	5
Lactation	0
Edema	0
Blood Dyscrasia	0
Retinitis *	0
Jaundice	0

¹ Wyoming State Hospital, Evanston, Wy.

² Sandoz & Company, Hanover, N. J.

* Ophthalmologist cooperated for eye examinations.

Fifty-eight patients improved on thiorazine. Seventy out of 70 were maintained on Mellaril with 61 (87%) receiving added benefit over and above what thiorazine was able to do. Side effects were negligible. (Table 1.)

CONCLUSIONS

1. Mellaril is a smooth acting, efficient therapeutic agent in the treatment of the psychotic patient.

2. Nausea is not masked.

3. Side effects in this study have been negligible.

4. Mellaril proceeds to aid psychotics with their behavioral problems over and beyond what thiorazine is able to do.

5. Fewer accidents reported during the 6 month period.

6. Relatives visit chronic epileptics more often and receive greater pleasure from visiting, since all patients have been maintained, improved, or markedly improved.³

³ Comparative seizure charts will, we hope, give valuable further information at the year's end. Laboratory results will also be closely evaluated.

TRIFLUOPERAZINE AND TRANLYCYPROMINE IN CHRONIC REFRACTORY SCHIZOPHRENICS

WALTER KRUSE, M.D.¹

In previous reports(1, 2), we have discussed the usefulness of trifluoperazine in treating schizophrenics and particularly in controlling hallucinations. For the present study we selected 40 chronic schizophrenic women who had not improved on trifluoperazine or any of the many other neuroleptics they had received. These were truly the "hardcore" patients; their average length of hospitalization was 12 years, during which time they had received virtually every kind of therapy.

The most prevalent symptoms in these patients were apathy, withdrawal, lassitude, psychomotor retardation, and inability to concentrate. With this symptom pattern in mind, we began adding imipramine to the trifluoperazine already being given. Noting no response, we then tried several monoamine-oxidase inhibitors in succession. The most promising results were seen with a combination of trifluoperazine and tranlycypromine,² a non-hydrazine MAO inhibitor. Dosage was individualized for each patient. Most patients were already being maintained on trifluoperazine, 10-15 mg., b.i.d., and tranlycypromine was then added in doses of 10-30 mg. daily. In 12 patients

who had been well-maintained on chlorpromazine, the MAO inhibitor was merely added to the established regimen. Duration of the study was 3 months.

RESULTS

Nine of the 40 patients were considered much improved at the end of the study. One of the 9 was receiving chlorpromazine, 200 mg. b.i.d., and tranlycypromine, 20 mg. b.i.d.; the other 8 were receiving trifluoperazine and tranlycypromine. Although 9 out of 40 is a small percentage, it must be kept in mind that these were among the most refractory patients in the hospital, and any improvement is notable in view of the lack of response to all previous therapies. The remaining 31 patients showed no better response to this combination than to any previous treatment.

DISCUSSION

The 9 patients who benefited showed their improvement by manifesting more interest in their surroundings and an increase in psychomotor activity where it had been previously lacking. Two of the 9 had been semistuporous before treatment.

There was a marked decrease in apathy and lassitude and an increase in ability to concentrate and make decisions. Improvement came about slowly in most cases, becoming gradually more apparent within the

¹ Chief of Female Service, Danvers State Hospital, Hathorne, Mass. Present address: Bundiswung 8, Westerland/Sylt, West Germany.

² The drugs used in this study were provided by Smith Kline & French Labs.

second and third month. In 3 patients in whom auditory hallucinations and delusions were major symptoms, these symptoms were greatly lessened or entirely relieved.

Since there was little symptomatic difference between the patients who responded and the majority who did not, no reason is apparent as to why the combination of trifluoperazine-tranlycypromine worked in some cases but not in others. It is encourag-

ing, however, that 9 of these seemingly hopeless patients did show a notable improvement. Further work on this combination is needed, but it is our impression that these drugs warrant a trial in the chronic refractory schizophrenic patient.

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METHYLPHENIDATE INTERVIEWS IN PSYCHOTHERAPY

GEORGE A. ROGERS, M.D.¹

Oral methylphenidate² to enhance psychotherapy was studied in 16 outpatients for a year. It has been helpful intravenously in alcoholics (2, 4).

A double-blind procedure was used. Each interview was rated in 3 areas : emotional expression, verbalization, and constructiveness.

Six months was spent in the study of the reaction of patients to the drug prior to the study. The general nature of the study was explained to the patients beforehand. A 10 mg. tablet was given one hour before the appointment on an empty stomach. The total dosage per interview was then adjusted to 40, 60 or 80 mg. one to one-and-a-half hours prior to the interview, depending upon the patient's reaction.

This study was more effective than most double-blind studies, since a physiologically effective dose was insured with each patient. The routine administration made any detectable physiologic effect inconspicuous. The experiment indicated that the drug would be of greater use when used selectively rather than routinely.

Experience with the drug emphasized the variability of its reaction, particularly with psychiatric patients.

1. Doses ranged from 10 mg. to 80 mg. In psychotics, even 10 mg. was extremely disturbing. In withdrawn and unemotional

patients, 60 to 80 mg. had little discernible effect.

2. Two patients complained of a rebound depressive effect 3 to 4 hours after taking the drug. One patient had an attack of suffocating feeling similar to globus hystericus on 60 mg. with panic. This was relieved by intramuscular chlorpromazine.

3. One patient subject to seizures about once yearly had a severe headache the remainder of the day when he took 10 mg. of methylphenidate. Another patient with migraine had a one-sided headache after taking 60 mg. It would, therefore, appear that in the dosage used methylphenidate has a slight tendency to be a convulsant.

4. One patient had a recurrence of partial dissociation on the occasions when he took the drug.

5. There were 4 instances in which patients attributed effects to the drug which later appeared to be definitely psychological.

There were 3 groups of results : a definite helpful effect ; a definite harmful effect ; and little appreciable difference.

In two obsessive compulsive and one phobic patient, the drug was unequivocally helpful. The same was true for two patients who had psycho-physiologic reactions as depressive equivalents. These patients had illnesses of long standing. In psychotics and pre-psychotics the drug seemed definitely contraindicated, not only because of the anxiety it provoked, but because even where the verbalization or emotion was in-

¹ Gloucester County Guidance Center, Woodbury, N. J.

² Study conducted under a research grant from Ciba Pharmaceutical Products, Inc., Summit, N. J. who supplied methylphenidate as Ritalin.

creased, the constructiveness or the usefulness of the drug interviews was definitely less. Acute anxiety reactions seemed to be aggravated by the use of the drug. Straight depressions did not benefit materially from the use of this drug. There was a difference in the subjective effect of the drug between those who were helped and those who were hindered. The patients who were helped generally found the drug pleasant and felt elated and high. Those who were hindered complained of an unpleasant production of tension. The medication was not helpful in poorly motivated patients.

The difference between the patients who were helped and those who were not was whether the illness was in a state of flux or not.

The study supplied a new insight into the problems inherent in the "double-blind" method(6). Particularly with drugs it is necessary to establish the dose of the medicine which will be physiologically effective in each test subject. In addition, it must be kept in mind that some drugs suppress at one dosage and stimulate at another. The level for these effects varies from person to person and from one occasion to another.

IMIPRAMINE TREATMENT

MICHAEL J. KEITH, M.D.¹

To follow-up my previous clinical note on experience with several "anti-depressant" drugs in private psychiatric practice :

I have abandoned the use of the MAO inhibitors, as I have noted no therapeutic response, and have continued to use imipramine on a somewhat larger scale. There appears to be a variable anti-depressant action associated with imipramine in doses of 75-300 mgm. a day. This is not consistent, and it is difficult to predict which patients will respond. My impression is that in severe agitated depressions the response is minimal. Also, depressions marked by extreme withdrawal and anergia show poor response unless an amphetamine-type drug is given concurrently.

My present practice is to prescribe imi-

SUMMARY

1. The use of oral methylphenidate to potentiate interviews in 16 office psychotherapy patients was studied for a period of one year. Results indicate that in patients with fixed neurotic processes it can speed the therapeutic progress.

2. The drug gave no physical complications in 16 healthy subjects in doses that were two to four times that ordinarily prescribed. Dosages ranged from 40 to 80 mg. orally per dose.

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pramine 25 mgm. q.i.d., combined with a milder ataraxic, or if agitation is marked, a phenothiazine derivative. If the patient is anergic, an amphetamine-type drug is administered. Concurrently, bedtime hypnotics are used if required. The dosage of imipramine is raised as needed to a maximum of 200 mgm. per day.

The time of response appears to be variable from 2 days to about 2 weeks. The manic-depressive patient reported in my previous paper has responded to imipramine on three occasions within 2 days when combined with promazine.

An interesting complication of imipramine therapy has been noted in 5 male patients in the 50-65 year age group. In 4 of these, complete urinary retention took place while on a dose of 75-100 mgm. per

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day. In another patient some difficulty in voiding took place. All these patients had moderate prostatic enlargement. On one of them a transurethral resection was done; the other patients either had the dosage lowered, or a Foley catheter was inserted to ameliorate the symptom.

It is not possible to fully implicate the imipramine, as, of course, many of these patients were receiving other medication which have effects on the autonomic nerv-

ous system (such as the phenothiazines and in one case, probanthine). However, it is well worth while to bear this in mind and treat quite seriously any complaint of difficulty in voiding in a middle-aged male on imipramine.

In summary, imipramine appears to be a potentially useful drug in the treatment of depression, but its action is unpredictable and apparently is not highly effective in the more severe cases.

IMIPRAMINE HYDROCHLORIDE (TOFRANIL) AND ENURESIS

R. E. G. MacLEAN, M.B., B.S., D.P.M.¹

In the course of studying the application of imipramine hydrochloride (Tofranil) to depressive states encountered in adults attending the Observatory Clinic, a mixed adult outpatient and child guidance clinic under the Victorian Mental Hygiene Authority, the senior psychologist (Mr. Hugh Esson) suggested that this drug might be of use in the management of enuresis in children. It was tried, and, possibly as a result of the difficulty in initiating micturition which is reported as a side-effect of the drug by a proportion of adult depressive patients, it has had a marked symptomatic effect in doses of 25 to 50 mgm. each evening.

The smaller dose is effective in the majority of enuretic children under 12, the larger in those older, in ensuring that most nights are dry; even in those consistently wetting. Inert tablets resembling the genu-

ine ones have not yet been used in a controlled study, and no conditioning to dryness such as frequently follows treatment with electrical awakening apparatus has been noted, for children relapse as soon as the drug is withdrawn.

Nevertheless it is useful to have at one's service a drug which can, for example, mitigate the severity of parental attitudes by removing, while this treatment continues, a main excuse for aggression. Again it is useful to be able to place in a child's hands a means of allowing his attendance at Scout, Cadet, Church, *etc.*, camps free from his former fear of wetting.

The medical staff of this Clinic are continuing this study, but it is encouraging enough to warrant this brief note in the hope that wider application as a result might lead to fuller evaluation, and in the meantime to more comfortable nights for some of the ashamed incontinent in our care.

¹ Psychiatrist Superintendent, Observatory Clinic, South Yarra, Victoria, Australia.

A STUDY WITH NORETHANDROLONE (NILEVAR)¹ IN A MENTAL HOSPITAL ON PATIENTS WITH BOWEL AND BLADDER INCONTINENCE

SOL SHERMAN, M.D.²

Inability of physicians to treat effectively bowel and bladder incontinence due to mental and emotional factors poses a serious problem. Initial studies by Saunders

and Drill of a group of anabolic steroids showed(1) that norethandrolone (Nilevar) produced an increase in weight of the levator ani muscles of castrated rats, and at the same time exhibited minimal androgenic effects. Vlavianos and Fink studied

¹ Nilevar was supplied by G. D. Searle & Co.

² Metropolitan State Hospital, Waltham, Mass.

(2) 11 male patients in the first clinical trial of norethandrolone for the control of bowel and bladder incontinence. They found norethandrolone effective within one week in stopping wetting and soiling in 6 of their patients. A follow-up study by Vaisberg, Michael and Saunders showed (3) that norethandrolone achieved excellent clinical results in 7 of 9 elderly patients treated for bladder and bowel incontinence.

In the present study 13 of the most severely incontinent patients at the Metropolitan State Hospital were placed on Norethandrolone. The ages of these patients ranged from 31 to 80 years. Eight of them had schizophrenia (2 catatonic, 2 hebephrenic, 1 paranoid, 2 of chronic undifferentiated type and one other unspecified), 2 had Alzheimer's disease, one had syphilitic meningoencephalitis and one had Korsakov's syndrome. These patients had been hospitalized for periods of 6 months to 29 years.

The severity of the problem of incontinence was judged by whether the patient soiled 1 or 2 times daily, 3 or 4 times daily, 5 or more times daily, or continually. The severity of the condition was rated by the numerals, I, II, III and IV, respectively; initially, two patients were rated as I, 5 as II, 3 as III and 3 as IV.

The patients received norethandrolone for periods of 8 days to 5 months. They were given 10 mg. by mouth t.i.d. Following initial norethandrolone therapy, the drug was discontinued simultaneously in all patients with no further medication administered unless incontinence returned.

Initially 7 patients showed excellent improvement, 2 good improvement, 2 fair improvement and in 2 the condition was unchanged. Two patients whose incontinence was intractable were subsequently given 50 mg. of norethandrolone intramuscularly, followed by no medication for one week, then the injections of 50 mg. were

repeated, but again without any clinical improvement.

Supplementary norethandrolone therapy was required in 5 patients. At this point dosage was individualized according to patients' needs. Three of these patients had fair results, receiving 10 mg. of norethandrolone t.i.d., but two patients did not respond to this dosage and were given 20 mg. t.i.d. Both patients failed to respond to the higher dosage. The one patient of the original 13 continued to refuse to take the medication and was dropped from the study after approximately two months of therapy.

CONCLUSION

Norethandrolone was effective in controlling bowel and bladder incontinence in 10 of 13 patients who had been hospitalized for periods of from 6 months to 29 years. The most severely incontinent patients at the hospital were chosen for this study.

Upon conclusion of the study the improvement in 6 patients was excellent, in 1 good, in 3 fair improvement, in 2 it was unchanged, and one patient was dropped from the study because he refused to take the medication. A daily dose of 30 mg. by mouth was effective in most instances. No side effects were noted at any time during norethandrolone therapy. The mechanism by which norethandrolone exerts its anabolic action is not fully understood, and further studies in this area are planned. The results of this study are in agreement with those of Vaisberg and his co-workers and Vlavianos and his associates.

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CASE REPORTS

THE GAMBLER AND HIS LOVE¹

IAGO GALDSTON, M.D.²

The psychiatrist, unlike the clinician, does not have either ample means or frequent opportunities for testing out his postulations as to the aetiology, the basic pathology, and the therapeutic handling of a given case. Psychiatry has nothing that equals in specific relatedness the tuberculin, the Schick, or the sugar tolerance test. Psychiatry lacks the equivalents of Koch's postulates, so determinate in establishing the authenticity of the causative agents of the infectious diseases. It is therefore rewarding to come upon an instance wherein the patient's own life experience confirms, at a later time, the validity of the formulations, postulated earlier, to account for the dynamics of his psychopathology.

It is such an experience that I wish to detail here. I initially described the patient in a paper published in *Mental Hygiene*, in October, 1951. The title of that paper was "The Psychodynamics of the Triad, Alcoholism, Gambling, and Superstition." The gambler was one of the "triad." Here I will describe him only sketchily, leaving out many details of his anamnestic history. They are not really relevant to the substance of this presentation.

The patient was, as he is today, an habitual and compulsive gambler. He did not in the first instance come for therapy because of his gambling; on the contrary he accepted gambling as a normal and even desirable component of his life pattern. His complaint was of a mild and, as it proved, a transient sense of depersonalization. It was associated with and had been precipitated by, the development of a psychotic reaction in his older brother. The patient had identified with and had introjected his sick brother.

The patient was an almost completely illiterate Jew, 44 years of age, married, and the father of two children. He was successful in business, shrewd, intelligent, and wealthy. He gambled consistently, and had done so since he was 12 years of age. He was in no sense a professional gambler. He gambled, as he phrased it, because he *had* to gamble. It temporarily relieved him of some kind of tension, the nature of which he did not understand and could not describe. I was intrigued by what he termed his "tension," and endeavored to trace its aetiology, as well as to fathom the mechanism by which he gained relief in gambling.

Here I will only present my conclusions as to the aetiology of his tension, without citing the anamnestic data from which they were derived. These data can be found in the earlier paper.

The patient had suffered early and severe deprivations in his affect relations with his parents. He was born in a small village in Poland, and grew up in poverty and squalor. His father was early separated from his mother and lived in a distant village. The patient was apprenticed to a shoemaker at the age of 7. From that age until he married, he had had no home. He was thus deprived of that rounded cycle of contacts and interpersonal reactions with parents and siblings that is so essential to a healthy development through infancy, childhood, adolescence, and youth. In consequence, he was, psychologically, continuously harking back to that childhood period in which he had suffered his arresting deprivations. There he had become compulsively fixated and unable to advance. He thus carried into the age of maturity, and included in his adult personality, the emotional and psychological dynamisms and the relational configurations of his childhood and pre-adolescent periods. His gambling was figuratively the behavior of a child to whom gifts may

¹ Read at the 116th annual meeting of The American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

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come by mere solicitation, or by teasing for them, as indeed is the case in the child's experience.

In this aetiologic perspective the neurotic gambler can be seen as compulsively acting out a plea to Lady Luck, symbolic of the surrogate figures, mother and father, but mainly mother, for a show of favor, for the affirmative response to the questions: "Do you love me?" "Do you approve of me?" "Do you think I am good, and smart, and strong?"

The neurotic gambler is compulsive in his need to pose these questions and obsessive in his uncertainty. Since he cannot gain a definitive and a for all time reassuring answer, the gambler continues to gamble until he loses. The neurotic gambler seldom, if ever, "quits" when he has made a "killing." He has a compulsion to lose and stays in the game until he loses, in other words until he is without the means to continue gambling. The neurotic gambler's compulsion to lose is understandable, for the more he wins, the more means he has wherewith to gamble, and the more intensive becomes the gambling. Release is to be found only in losing. The questioning can thus be deferred until the next time: until the next game.

Few gamblers come for psychiatric treatment, with gambling as their chief complaint. My patient complained of his sense of depersonalization, not of his gambling. In treatment he reintegrated his personality without much difficulty. After a year of therapy he returned to his accustomed world and its accustomed ways.

Five years later the patient called for an appointment, complaining of what amounted to an acute anxiety. He was again accepted for therapy, and therein we come to *The Gambler and His Love*.

The gambler, as I reported previously, was married and had two children. He was fond of his wife, as a son might be of his mother. He provided her with all the comforts she desired, but did not share life with her, socially or sexually. She concurring, he arranged to have her vacationing or visiting away from home for the greater part of the year, in Florida, and/or the Catskills. The children were placed in boarding schools. He had never wanted

and never thought of legally separating from, or divorcing his wife. He was indeed fond of her—in his own way.

The patient was sexually active, mainly with costly call girls, and casual women. His business required him to travel frequently and widely. His excursions were enlivened with many and bizarre sexual adventures. But these were more in the nature of an exercise than of an orgiastic indulgence. In telling of his sexual ventures he always spoke as if he had been "external to the experience."

But once something extraordinary happened to him—a woman fell in love with him, and she refused to be put off, or to accept the role of a casual partner. The woman was married and the mother of two children. Her devotion to the patient knew no bounds. She pursued him constantly and responded to his every beck and call. She asked nothing of him but his love.

At first he was emotionally unresponsive, aloof, and casual. He relished her sexually but wanted no involvement. In time, however, the woman prevailed, at least to the extent of engaging him emotionally more than any other woman had ever done before. He even suspected that he was beginning to love her. But the more his affections became involved, the more his suspicions grew. Did she really love him? Was it for the love of him that she was sacrificing her husband (who was in fact a shady character with a criminal record), and her two children? Or, was she just a "bum," and after something other than his love. She had "carried on" with him for 18 months, and during that time had not asked him for any money. That puzzled him greatly, and fed his suspicions copiously. He queried her on every score, and though she offered him infinite reassurance and a thousand proofs of her love, he remained unconvinced and suspicious. He was, to quote him, "tortured, nervous, tense."

And this is the way he set about to gain relief! He enlisted the cooperation of his most intimate gambling crony, and with him conspired to put the woman, his love, to a test. The patient was to leave the city for a week, and during this time the friend was to try and "make" the woman. As it was agreed, so was it done! And then came the

Nemesis. The patient returning, his friend reported that though he had tried his very best, employing his every stratagem and resource, he could get nowhere with the woman. She was, he assured the patient, steadfast in her loyalty, and committed in her love.

But, as I am sure you can anticipate, this did anything but reassure the patient. It only enlarged the range of his suspicions, for now he not only doubted the love of the woman but also the fidelity and truthfulness of his friend.

It was all too much for him, and he came back for help. Under the circumstances therapy could only be supportive with a minimum of uncovering and insight. Yet in the end he managed to regain his singular balance. This is the pattern he followed. He gave up his "love," and simultaneously regained his friend.

The unconscious homosexual component in this constellation is, of course, self-evident. But more interesting and significant is what happened with his compulsion to gamble. He had abandoned gambling during the 18 months of his involvement, and resumed it when "the love" was discarded. He now gambled recklessly and lost a good deal of money. His game of preference was gin rummy. Now he played dice and bet on horses. He resumed his sexual contacts with call girls and casuals. He made an abortive attempt to "get closer" with his wife. Nothing came of it. And yet, he found living more tolerable. He

returned to the old and endless pursuit of Lady Luck, who never answers but only smiles the enigmatic smile of the Sphinx.

During therapy he reported an interesting dream. "He was walking somewhere in Chicago. A man and a woman tried to hold him up. They took everything from him. He ran to find the cops. Then ran further and finally gave up."

This slice of life, treated as a psychiatric biopsy, confirms, I believe, this much, that the neurotic gambler always plays to lose, that in his gambling he is obsessively teasing his surrogate figure Lady Luck for a show of favor, yet cannot and will not accept "Yes" for an answer. Such an answer does not square with the deeper facts of his life, nor with the unconscious memories of his irremediable deprivations. And in some ways I am persuaded the gambler is right; for who can make up, and what can cancel out, the egregious loss of the mother's assuring love and the father's supportive sanction. Such a one is doomed to wander through life asking unanswerable questions.

More pointedly, the Gambler and His Love are an unrealistic pair. Only the gambler is real. The gambler has no love. He is incapable of love. Gambling is the gambler's addiction, not his love. For love has the requisite of an antecedent ego maturation—to which the gambler has not attained. He is in these respects severely retarded, a victim of his deprivational experiences.

A CASE REPORT OF GASOLINE SNIFFING

ROBERT V. EDWARDS, M.D.¹

Recently, a 17-year-old boy was encountered who had been sniffing gasoline vapors since age 6.

At age 6, while helping to siphon gasoline from one tractor to another, John discovered inhalation of gasoline vapors was pleasurable. His mother reported he had been observed at least once a month to inhale and exhale gasoline vapors while

pressing his mouth over a gasoline tank. John began smoking cigarettes at age 6. From age 6 to 9, he was anemic and complained of pains in his arms and legs. During that 4-year period, he received "blood medicine" from his physician, who was not informed about the gasoline sniffing. John repeated two grades in grade school. He left school for economic reasons at age 16. From age 14 to 16½, John also drank alcohol excessively. He stated he had been sniffing

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gasoline 3 or 4 times a year in recent years. He would sniff gasoline every 3 or 4 hours over a 48-hour period: inhalation would last 3 to 5 minutes. John claimed that gasoline sniffing greatly stimulated him and enabled him to think very clearly. He would then feel that he could do anything. On many occasions he sniffed too vigorously and lost consciousness.

John's mother perceived him as possessing a very superior intellect. It was her conviction that her son was destined for greatness. John had the same self-concept. He rationalized that he had not as yet achieved greatness because of adverse events such as the necessity of discontinuing his education. He was an extremely helpful son and would work long hours all day and far into the night attempting to help mother, father, and even the carpenters when they built the barn. John revealed that his father had always worked too hard and never seemed to be interested in his family. He reported: "Mother worries about everything. She always believes some terrible accident is going to happen to members of our family." John believed mother had affected him as he also worried about accidents. His mother had worried about her son's sniffing gasoline whereas the father reportedly regarded the problem as unimportant. John recently changed many of his bad ways because of his fiancée's influence. She made him give up drinking and insisted that he seek psychiatric help for gasoline sniffing. He had been working on a farm where he had been repeatedly observed sniffing gasoline. His employer considered John insane and discharged him. His fiancée refused to consider marriage unless he straightened himself out. For this reason, John consulted a physician about his gasoline sniffing.

During the two hours of interviewing there was no evidence of an organic mental syndrome. The patient's Minnesota Multiphasic Personality Inventory was a 9'05-21 profile which would be typical of people usually classified as hypomanic or manic. The Gorham's Proverbs Test indicated 19 abstract and 2 concrete responses. On the Sentence Completion Test John revealed he was suffering from considerable anxiety. Before hospitalization could be arranged, John

struck a train with his car while traveling around a blind curve. John and his mother were killed.

Dynamically, it appears that John had a lifelong manic hyperactivity designed to achieve greatness as expected by his mother. Because of his powerful need to achieve more than was possible, one might speculate that the patient did experience a subjective increase in efficiency when sniffing gasoline. Clinger and Johnson(1) reported gasoline sniffing in a 16-year-old Negro boy, regarded as schizophrenic, and a 13-year-old white boy who exhibited depression and anxiety. Faucett and Jensen (2) reported a case of gasoline sniffing in an 11-year-old boy. There was no clinical or laboratory evidence in the 3 cases of lead poisoning or liver disease. The 11-year-old boy had an abnormal EEG. All three reported experiencing hallucinations while sniffing gasoline. The 13-year-old boy reported feelings of omnipotence and omniscience while sniffing gasoline. He would then feel that he had unlimited power with the ability to travel great distances and survey the whole world. The 11-year-old boy utilized his hallucinatory experiences while sniffing gasoline to plot the removal of his "bad father". It is of interest that this boy also had smoked a pack of cigarettes daily since age 5 and also lived in an isolated farming community. Pruitt(3) reported a 6-year-old child who was brought to his office inebriated and unable to stand. The mother reported that her child had been addicted to sniffing gasoline for 18 months. No other details were given. The 3 previously reported cases discontinued gasoline sniffing when the underlying emotional conflicts were treated and improved.

SUMMARY

In comparing the 4 cases, it is apparent that gasoline sniffing over a prolonged period need not necessarily produce serious organic damage. Pleasant hallucinations appear to be a reward for sniffing gasoline. In two cases, a feeling of omnipotence and omniscience was clearly reported to be an important effect of gasoline sniffing. Gasoline sniffing may tend to occur in a child with the psychodynamics of a manic.

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PROLONGED PHENOTHIAZINE HEPATITIS : REPORT OF A CASE

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Since 1955 a number of reports (1-3) have discussed the syndrome of chlorpromazine hepatitis. A gastroenteritis, occurring within 2 to 60 days, usually precedes the development of clinically evident jaundice. The incidence of this complication has varied from 0.5 to 4% and the total dose preceding the onset of this reaction has been as little as 150 mg. Hepatitis has occurred as late as two weeks following discontinuation of the drug. It is not known whether this is an allergic or hepatotoxic manifestation. The majority of cases have evidenced clinical and/or chemical changes indicating intrahepatic obstructive jaundice persisting from one week to 3 months. Cases lasting more than 6 months have been very infrequent. Gebhart, *et al.* (2) mentioned two patients who had abnormalities persisting for 10 months (laboratory findings not reported). The following case, typical of a chlorpromazine hepatitis, emphasizes the persistence of chemical abnormalities despite clinical improvement and reports results of laboratory tests over an 11 month period.

This 23-year-old white, single, male college graduate was hospitalized at another hospital on March 31, 1959, because of paranoid schizophrenia. There was a history of adverse reactions to drugs. Chlorpromazine, 50 mg. q.i.d., was started on the day of admission, increased to 100 mg. q.i.d. on April 2, and continued through April 11, when he was transferred to Walter Reed General Hospital. Trifluoperazine, 10 mg. q.i.d., was begun on that date and continued for 3 days. On April 15, the patient

vomited, was lethargic and anorectic, his urine was dark, and scleral icterus was noted. Liver function studies were done at regular intervals. The most significant variations are noted in Table 1. Additional data revealed normal total proteins, thymol turbidity, cephalin flocculation, blood urea nitrogen, non-protein nitrogen, fasting blood sugar, and prothrombin time. The white blood count on April 16, was 6500 with 36% neutrophils, 48% lymphocytes, 11% eosinophils and 5% monocytes. Repeat white cell counts showed no elevation and normal differential without eosinophilia. Weight loss was prominent in the early months of hospitalization but was enhanced by severe psychotic symptomatology. The patient remained afebrile throughout. Pruritus, of varying degree, heralded initially by a transient, finely papular erythematous rash, occurred intermittently from July through September. His hospital course was characterized by minimal improvement in mental status despite 37 ECT treatments. Other medication given for brief periods during May through August were : probanthine, Benadryl, phenobarbital, Ritalin, meprobamate, amobarbital, atropine, and Anectine. None of these appear to have affected the course of his jaundice. Prochlorperazine (one 30 mg. "span-sule") was given on May 4, 1959.

It is not known whether the use of two phenothiazine derivatives played any part in the prolongation of the patient's hepatic disease. Nevertheless, except for the duration, this case is quite typical of a chlorpromazine-induced intrahepatic obstructive jaundice. Of particular interest is the persistent marked elevation of alkaline phosphatase over the course of 11 months accompanying a steadily diminishing serum bilirubin. It would seem reasonable to suppose that this abnormality may persist for one to two years in this case. Although the absence of necrosis is characteristic, the elevation of the serum glutamic-oxaloacetic

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² This material has been reviewed by the Office of the Surgeon General, Department of the Army, and there is no objection to its presentation and/or publication. This review does not imply any indorsement of the opinions advanced or any recommendation of such products as may be named.

TABLE 1
ABNORMALITIES IN LIVER FUNCTION IN A CASE OF PHENOTHIAZINE HEPATITIS

	17 <i>April</i>	5 <i>May</i>	22 <i>May</i>	3 <i>June</i>	24 <i>June</i>	20 <i>July</i>	17 <i>Sept.</i>	23 <i>Oct.</i>	17 <i>Nov.</i>	23 <i>Feb.</i>
Alkaline Phosphatase SJRU **	5.2	24.8	33.1	23.7	13.4	31.2	46.4	53.1	56.5	39.4*
Total mg.% Bilirubin	5.4	16.2	12.3	11.4	11.3	8.6	4.6	2.6	—	1.1
Direct mg.% Bilirubin	1.8	11.6	8.3	7.4	6.2	5.0	2.8	1.6	—	0.5
Transaminase Units	107	311	104	—	81	—	132	—	325	—

* 39.4 King-Armstrong Units.

** Shinowara-Jones-Reinhart Units.

transaminase makes likely the presence of some hepatic cellular damage. It is expected that follow-up studies will be reported.

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COMMENTS

INTROSPECTION

The Greeks said "Know Thyself." This is a dictum acceptable only with qualification. There is another saying to the effect that the ultimate of knowledge is to know that one knows nothing, despite the fact (begging the question in using the word "fact") that the statement is self-contradictory. However, the word "agnostic" is in a general way useful in more than one practical application.

But to come back to knowledge of self. Commonly two aspects of the person are spoken of—the narrowly physical part, the machine; and the part that has to do mainly with consciousness, and variously referred to as the psyche, mind, entelechy, soul or spirit. This latter, with a bow to Hegel, may be thought of as a sort of upper chamber or attic of the mind. However, it seems reasonable to consider the physical aspect of self before venturing into the arcana of the psychological self as such.

There will probably be general agreement that the common rules of hygiene—cleanliness, temperance in all things, a sense of discipline—should be taught to children and observed by adults. How much farther should self-knowledge and self-ordering of the machine go?

The gastrointestinal canal has been called the *primae viae*, and with good reason; and it may be safe to say that more persons are morbidly concerned with what goes on in this main highway from oral cavity to cloacal orifice than with any other feature of the physical economy. One example of this concern is the so-called *anorexia nervosa*. I remember one patient with this disorder who by fasting had reduced herself to skin and bones and finally could take only water, and in the smallest spaced sips. At this point she became an emergency hospital case. Self-imposed avoidance, for assumed health reasons, of the greatest variety of foods is a common phenomenon. Somewhat less frequent are those persons who worry about one or more of their other organic systems. Occasionally, unhappily, such a fixed con-

cern may be of iatrogenic origin.

The point is that the human body is a marvellous chemical laboratory and a wonderful machine. It is self-regulating, and beyond giving it ordinary decent care, even sometimes without such care, it will run itself quite well without any help from what we laughingly speak of as our ego. In fact when the ego begins to interfere, things are likely to run badly and in the direction of hypochondriasis. These matters are so elementary as hardly to deserve mention, except for the circumstance that it is just such kindergarten rules that the doctor may have to try to teach certain of his patients.

The average person cannot simply by taking thought alter his pulse rate, nor can he regulate the exchange of gases in his lungs or tell the kidneys what to retain and what to eliminate. And as for food, good digestion is more likely to wait on appetite and health on both if the intake is forgotten once it has pleased the palate and passed on its journey downward. In all these matters the body knows how. Leave it alone to do its own work.

If, therefore, it is good advice to the patient worried about his physiology not to try to scrutinize the processes that go on inside his skin, how about the one who is too introspective as to his psychological processes? Here the situation may appear to be somewhat different, but is it essentially? The mental operations of the average person will be molded by the culture of which he is a part. He will develop habits, assume attitudes, form prejudices, acquire beliefs; and all this may be more or less automatic. Indeed, judging by the stereotypes in speech that bulk so large in every-day verbal exchanges, one might say that what we call mental reactions might almost as well be called reflexes. Anything that seriously disturbs this routine flow of events and these automatic responses may predispose to morbid symptoms.

This is where introspection may become unhealthy. Mental tests are valuable within

limits and the patient must of course be encouraged to tell his story. But having told it once it may be a part of his illness to tell it again and again. This pathological introspection may reach the point where the patient appears to have little or no other content of consciousness beside the dreadful state of his own inner self. His "organ recital" tends to become self-perpetuating.

This admittedly, is an extreme situation and difficult to combat, but it illustrates one terminus of the introspective track. It should not take the qualified physician, psychiatrist or other, long to determine how to deal with the factor of introspection in the examination and treatment of each patient; and in listening to his story or his complaints he will try to judge the relative importance of the various matters brought forth and to share his judgment with the patient, if the latter is prepared to receive it. It is common experience that it may be a great relief to the patient to hear the considered judgment of the doctor that some item in his history, over which he has worried and brooded, can be dismissed as negligible, that he can be encouraged to forget it. Forgetting has its place in normal life as well as remembering, and blessed oftentimes is he who is able to forget, and whose trouble can stay forgot.

In psychotherapy this business of introspection is not always given the discriminating attention it requires. It so easily passes over from the salutary "know thyself" of the Greeks to morbid concern about old, unpleasant things perhaps long since consigned to oblivion. For it is in the nature of the depressive mood to dig up unhappy things for vivid recollection and overweighting just as an elevated affect dwells on pleasant memories in keeping with its own euphoria.

It boils down to this: How much introspection is normal, that is, wholesome for the given individual? In how far should the doctor encourage more or less introspection, bearing in mind that for a great many patients self-probing and memory-delving is just about the worst medicine they can take. Indeed morbid introspection is itself a mental disorder. And just as the physical machine works better if one doesn't try to run it consciously, so the psychic machine is likely to run better if not interfered with through morbid self-consciousness.

The ultimate of this kind of self-torture through pathological introspection is vividly set forth in the first part of Dostoevsky's "Notes from Underground"; and the physician practicing psychotherapy might profitably review this story now and then.

"ON WHOSE SHOULDERS . . ."

No group should ever neglect to honor the work of forbears, upon which their own contributions are based. This is particularly true in medicine. Great is the loss to anyone who neglects to study the lives of those whom he follows.

—HOWARD A. KELLY

CORRESPONDENCE

URINARY TESTS FOR PIPERAZINE-LINKED PHENOTHIAZINES AND FOR CHLORPROMAZINE

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY:

SIR: Experience in these laboratories has demonstrated that, although the test for Thorazine and its metabolites in urine, as described by Forrest, Forrest, and Mason (1), is quite satisfactory, the test for the piperazine-linked phenothiazines (2) is not. The latter is complicated by a very high rate of false positive reactions as well as by the relative instability of the reagent.

When the piperazine-linked phenothiazine test was carried out on the urine of 26 of the laboratory and office personnel, 10 false positive reactions were obtained. The following was the distribution of color intensities as determined from the chart: Three, trace; two, 1+; two, 2+; two, 2½+; one, 3½+. When the test was applied to the urine of 19 patients who had not been prescribed a phenothiazine drug for at least 6 months, 12 of the 19 gave positive reactions with the following distribution of intensities: Three, trace; four, 1+; three, 1½+; one, 2+; one, 2½+. Duplicate analyses ruled out the possibility of contaminated glassware. Finally, tests on the morning urines of 4 out of 5 patients receiving placebos of lactose as part of a closely supervised double blind study consistently yielded positive reactions, with few exceptions, over a period of 3 months. The intensities of colors were in the range of trace to 3+ and were still obtained for a period of at least one week after discontinuation of the placebo. The fifth patient gave 10 positive reactions out of a total of 77. A spot check of the patients' capsules, on one occasion, showed that the patients were indeed receiving placebos. The number of these false positive reactions are far in excess of the 2% level reported (2). Heyman, *et al.* (3), using the urine of geriatric patients, have recently reported a rate of

15% false positive reactions with this and two other similar tests. The above results were obtained using urine from young and middle-aged adults.

The false positive reactions were not related to bile in the urine as determined by the Gmelin or Huppert tests for bile pigments, to administration of any one drug, or to sex or race. Neither were they due, as stated above, to the possible excretion of phenothiazine from previous administration, nor to the administration of the wrong capsules in the case of the double blind study.

Regarding the reagent, a good dry preparation of $\text{Hg}(\text{NO}_3)_2$ works best. If it becomes too wet, no reaction is obtained. Since $\text{Hg}(\text{NO}_3)_2$ is extremely hygroscopic, excessive care must be taken in opening and closing the bottle for weighing out of samples. A preparation of the reagent was found to be satisfactory for a period of two months and then was found to decay within a period of a week. The reagent is colorless when first prepared and turns yellow in approximately one hour. This color change, however, does not seem to affect its use.

Contrary to these findings, the test for Thorazine appears to be quite satisfactory. No false positive reactions were noted in 35 tests comprising the urines of 19 of the laboratory personnel and 16 patients. While assaying the daily urines of 8 patients initially receiving 800 mg. of Thorazine per day, it was found that, as the dose was reduced to 600 mg., 400 mg., and 200 mg., at two-week intervals, the color obtained in the test correlated well with the dose administered. All urines were negative 6 to 8 days after discontinuation of the drug. In more than 2000 routine tests, the general impression has been that there is good correlation between color obtained and dose of drug administered. No difficulty was en-

countered regarding the stability of this reagent.

Pollack(4) has also previously confirmed the usefulness and validity of the Thorazine test.

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REPLY TO THE FOREGOING

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY :

SIR : Referring to the observations of Drs. Posner and Solomon, we are aware of the occurrence of additional "false positives." Since these are caused by both endogenous and exogenous factors, their incidence will vary with the type of hospital population and controls used. Our statistical data for 5 tests for urinary phenothiazine compounds(1) were compiled on the basis of the hospital patients in a neuro-psychiatric Veterans Hospital, the vast majority of whom are in the 20 to 50 year age bracket, with hospital personnel and patients not on phenothiazine medication serving as controls. Further tests conducted by us on different hospital populations (general medical, tubercular, phenylketonuric) have yielded additional "false positives" and these supplementary data have been reported by us(6-8). They refer to the following tests :

1. Rapid urine color test for chlorpromazine (Thorazine), promazine (Sparine) and mepazine (Pacatal)(1).

2. Rapid urine color test for trifluorpromazine (Vesprin)(2).

3. Rapid urine color test for piperazine-linked phenothiazine drugs(3).¹

4. Rapid urine color test for the detection of small amounts of phenothiazine compounds (FPN, General Test)(4).

5. Rapid urine color test for thioridazine (Mellaril)(5). Additional "false positives" observed pertain mainly to tests 2 and 3 which are extremely sensitive and suitable for the demonstration of traces (fractions of a gamma) of phenothiazine compound

per ml. of urine. The high degree of sensitivity is obtained at the expense of a higher rate of "false positives," some of which have been identified as follows :

A. Urines from patients on daily medication of 6 g or more of para-aminosalicylic acid showed "false positives" ranging from the trace to ++ levels in tests 1, 4 and 5, and from the + to +++ levels in tests 2 and 3. See also(3) and(5).

B. Urines obtained from phenylketonuric patients showed "false positives" with tests 2 to 5, ranging from the trace to +++ levels, the latter having been obtained with test 3 in a urine showing 80 to 100 mg. of phenylpyruvic acid according to the phenistix test. See also(5).

C. Urines from persons with impaired liver function—acute or chronic—, with and without showing abnormal urinary bile content, may show "false positives" of intensity trace to + with tests 2, 3 and 4 (2, 3, 4, 5).

D. Urines of patients on therapy with high doses of natural conjugated or synthetic estrogens have shown occasional "false positives" of trace to + levels with tests 2, 3 and 4.

E. Some, in our experience, infrequent but consistent "false positives," not attributable to any factor under A to D were found in control urines of persons without any medication. In the absence of exact knowledge it is assumed that so far unidentified biochemical agents (possibly steroids, ketones, phenolic, indolic or hydroxylated pyridine derivatives) may account for these unexplained "false positives." This hypothesis is advanced on the basis of color reactions obtained *in vitro* with relatively

¹ Test used by Drs. Posner and Solomon.

high concentrations of these compounds.

Regarding the stability of solutions of uranyl nitrate and mercuric nitrate in concentrated hydrochloric acid (test solutions 2 and 3), the pertaining data were mentioned in the original publications, and, in laboratories with controlled humidity, these test solutions remain operative for 6 months and longer, if carefully stored and handled.

It should also be re-emphasized that all evaluation of colors should be performed strictly as specified, i.e. within 20 seconds for test 4, and, within 30 seconds for tests 2 and 3. All subsequently appearing color or unspecific darkening of urines should be disregarded.

We are unable to offer any other helpful comment with regard to the high incidence of "false positives" in the test series on 51 individuals conducted by Drs. Posner and Solomon. In our own extended series of controlled tests, excluding phenylketonurics and patients on para-aminosalicylic acid, we found our "false positives" to approximate 5% for test No. 2, 3, 4 which is well below the figure of Heyman's(9) series (done on geriatric patients) and far below Posner's.

In spite of the occurrence of "false positives," the tests constitute valuable diagnostic tools, in clinical psychiatry if properly evaluated and interpreted in the light of the above, especially since we have not seen any "false negative" tests in any of the

5 different procedures mentioned above. In this connection it should be kept in mind that extreme urine dilutions after excessive fluid intake may give rise to very inadequate color reactions.

In all cases of apparent "false negatives" the tests should be repeated on another urine specimen, to be obtained 1 to 3 hours after carefully supervised administration of drugs, preferably in form of liquid concentrates.

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FRANKL'S LOGOTHERAPY

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY :

SIR : In your August issue Hans A. Illing, Ph.D., reviewed Victor E. Frankl's book : *Das Menschenbild der Seelenheilkunde*. This review is not critical but slighting. Frankl in his book does not "deal with a multitude of topics," he discusses one topic, namely the image of man in different kinds of psychotherapy.

Frankl pays due respect to the genius of Freud but he does not treat psychoanalysis as a dogmatic religion and he agrees with Ludwig Zeise whom he quotes : "... the concept of depth (in psychoanalysis) is one-sided and incomplete."

It seems to me unfair to Frankl and to the readers of your *Journal* when the reviewer distorts the sense of the author's writing by taking a few words out of the context and quoting them. Frankl does not say that "the mass neuroses of mankind cannot be resolved." He says that the pathology of the spirit of the age, the collective neurosis of mankind, cannot be overcome "without an appeal to (man's) freedom and responsibility." These are basic concepts in Frankl's Logotherapy which the reviewer has completely overlooked.

G. Kaczanowski, M.D.,
Ontario Hospital,
Whitby, Ont.

REPLY TO THE FOREGOING

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY :

SIR : In reply to the foregoing, Dr. Kaczanowski probably raises the important question, whether a report on any book should be critical and deal extensively with the content or should, if this is not possible for reasons of space, not be dealt with at all.

My reports ("New German Psychiatria and Psychologica," the third installment of which appeared in the August issue of the *A.P.A. Journal*) are notices of German books, and not reviews in the customary sense. They are rarely critical and hardly ever "slighting," as Dr. Kaczanowski interprets my report to be ; a book, which in my opinion has little value, will not be selected for a report in the first place.

I have had much personal correspondence with Dr. Victor E. Frankl, and admire him greatly ; hence my inclusion of his book in my reports. I maintain that, while "logotherapy" is his primary brain-child, there is, and should be, a "multitude of topics" in his book. When I quote Frankl (in a report consisting of but two sentences!) as being not in agreement in Freud's *Lehre*, Dr. Kaczanowski in *his* way says the same. My translation of a passage in Dr. Frankl's book seems to me *substantially* similar to that of your reader. Above and beyond this, translators are known to differ in their translations. Lastly, the opinion of the reviewer or "reporter" is his own, to which he is entitled.

Hans A. Illing, Ph.D.,
Los Angeles, Calif.

A CASE FOR JEFFERSON¹

Harrison loves his country too,
But wants it all made over new,
He's Freudian Viennese by night,
By day he's Marxian Muscovite.
It isn't because he's Russian Jew.
He's Puritan Yankee through and through.
He dotes on Saturday pork and beans—
But his mind is hardly out of his teens—
With him the love of country means
Blowing it all to smithereens
And having it all made over new.

—ROBERT FROST

¹ From STEEPLE BUSH By Robert Frost,
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NEWS AND NOTES

THE ISRAEL S. WECHSLER LECTURE.—Dr. Macdonald Critchley, F.R.C.P., Senior Physician of the National Hospital for Nervous Diseases, Queen Square, London, and Neurologist for Kings College Hospital, London, England, will deliver the Sixth Annual Israel S. Wechsler Lecture on December 9, 1960 at 8:30 p.m. in the Blumenthal Auditorium of the Mount Sinai Hospital, New York City. Dr. Critchley's lecture is entitled: "The Nature of Animal Communication and its Relation to Language in Man."

THE HOFHEIMER PRIZE.—This prize of \$1,500 is awarded annually by The American Psychiatric Association for an outstanding research contribution in the field of psychiatry or mental health which has been published within a 3-year period up to the date of the award. Studies in press or in preparation are not eligible for this award.

This competition is open to citizens of the United States and Canada who were not over 40 years of age at the time the study was submitted for publication; or to a research group whose median age does not exceed 40 years. The next award will be made at the annual meeting of the Association in May 1961. Entries submitted to the Prize Board before March 1, 1961, will be considered. It is imperative that 8 reprints or duplicated copies of each entry as well as the necessary data concerning age and citizenship be sent to David A. Hamburg, M.D., Chairman, Hofheimer Prize Board, National Institute of Mental Health, Bethesda 14, Md. All entries are independently evaluated by each member of the Hofheimer Prize Committee and final selection determined by equal vote.

UNIVERSITY OF CALIFORNIA SYMPOSIUM ON "CONTROL OF THE MIND."—This symposium will be held Jan. 28 to 30, 1961 in San Francisco. The topic will be discussed from many viewpoints: "the physiological and biochemical, the psychologic, sociologic and historical, and from the point of view of religion, mass communication, and

political philosophy." A considerable number of well known writers and scientists will participate.

The office of Public Information of the University announces this as "an unprecedented symposium"; it unquestionably will be. For further information write to the Department of Continuing Education in Medicine, University of California Medical Center, San Francisco 22, California.

RESEARCH TRAINING IN PSYCHIATRY.—The Graduate Educational Program of the State University of New York Downstate Medical Centre offers a 2-year program of research training in psychiatry leading to the degree of Doctor of Medical Science. The course is open to M.D.'s who have completed 3 years of residency training in psychiatry. Candidates will also be accepted after 2 years of residency, in which case, the final year of residency will be taken at the psychiatric division of Kings County Hospital, concurrently with this program, making a total of 3 years for the combined program. It provides an opportunity to do research and offers courses in research methods in psychiatry. A broad interdisciplinary faculty conducts the teaching and supervises research of candidates.

Each candidate accepted will be granted a fellowship of \$7,500 for the first post-residency year and \$8,000 for the second year. Three-year candidates will, in addition, receive \$7,100 for the final residency year.

Applications for the academic year beginning September 1961 should be submitted before February 1, 1961. For information write to: Office of Admissions, Downstate Medical Centre, 450 Clarkson Ave., Brooklyn 3, New York.

THE JOINT MEETING OF THE JAPANESE ASSOCIATION OF CORRECTIONAL MEDICINE AND THE MEDICAL CORRECTIONAL ASSOCIATION OF AMERICA.—This meeting was held in Tokyo on September 20 and 21, 1960 on The Problem of Stress in Correctional Institutions.

About 20 American delegates were present, and prior to the meeting they were conducted through various correctional institutions in Tokyo and vicinity. Among these were: the Tokyo Juvenile Detention and Classification Home, the Fuku Prison, the Tokyo Women's Guidance Home and the Hachiojo Medical Prison.

In the course of the exceptionally fine program many research papers were read to an audience of 450 to 500, consisting mainly of psychiatrists and other medical specialists, psychologists, social workers, members of the staff of the Ministry of Justice and other correctional personnel of professional standing.

American speakers included Dr. Winfred Overholser, Superintendent of St. Elizabeths Hospital, Washington, D. C. on "The Role of Psychiatry in Correctional Administration," Dr. James V. Bennett, Director of the Bureau of Prisons, U. S. Department of Justice, on "Psychiatric Problems in Prisons," Dr. Harry R. Lipton, Atlanta, Ga., on "Stress in Correctional Institutions," Dr. Sarah Geiger, Director of the Milwaukee Child Guidance Clinic on "Electroencephalographic Changes in Aggressive Behavior," and Dr. Ralph S. Banay, Secretary of the Medical Correctional Association of America on "Violent Youth."

Japanese speakers included: Tetsizo Kosimo, Minister of Justice; Dr. Nagahide Ishibashi, President of the Japan Medical Association; Dr. Masao Otsu, President of the Japanese Association of Correctional Medicine; Dr. Akira Masaki, President, The Japanese Correctional Association; Dr. Tsuneo Muramatsu, Dean, School of Medicine, Nagoya National University; Prof. Sadao Hirose; Prof. Kokichi Higuchi; Dr. Toru Matsumoto; Dr. Akira Kobayashi; Dr. R. Yamanaka; Dr. Tamio Sase; Dr. Takayuki Tsuboi; Messrs. Yoshitsugu Baba, Vice-Minister of Justice; En. Ohta, Vice Governor of Tokyo; Taka Hashi; Shigeru Nishi; Yoshiyuki Tanaka; Noriyuki Hanakawa; Ryuichi Hirano; Tory Matsumoto; Teizo Ichikawa; Bunsaku Nakao; Ichiro Ohsawa and Mrs. Tsuneko Mita, Director of Tokyo Women's Guidance Home.

An outgrowth of the Meeting was the founding of the International Association of Correctional Medicine. The officers elected

were Winfred Overholser, M.D., president; Masao Otsu, M.D., vice-president; and Ralph S. Banay, M.D., secretary. It is planned that the new association will meet bi-annually in different countries.

The American delegates were given a warm and cordial welcome and were generously entertained by their hosts. A special concert was given for the group in the Music Room of the Imperial Palace, and they attended a performance at the Kabuki Theater, where they were introduced to the actors. They were escorted through the Summer Villa of the Emperor and visited many fine shrines, temples and historical buildings. One of the most interesting of these was Shosoin in Nara, situated in a garden closed to the general public, where priceless Imperial treasures are housed. Once a year the Emperor, who is said to possess the only key, opens the house to inspect these treasures. Another highlight was the visit to the Sacred Stables of the Toshugo Shrine in Nikko to see the originals of the famous three monkeys "Hear no Evil," "Speak no Evil" and "See no Evil." Another famous sculpture there is a cat which seems to be sleeping but which, according to the legend, is protectively watching over the inner sanctum.

This fine opportunity for scientific and social exchange between two similar groups and the kind of hospitality extended to the American delegates are a symbol of the increasing friendship between the two countries.

THE AMERICAN ASSOCIATION FOR THE STUDY OF HEADACHE.—This association was organized this Summer at the time of the Annual A.M.A. meeting in Miami. The following officers were elected: President, Henry D. Ogden, New Orleans, La.; Vice-President, Walter C. Alvarez, Chicago, Ill.; Treasurer, Robert E. Ryan, St. Louis, Mo.; Secretary, Bayard T. Horton, Rochester, Minn.; Moderator, George T. Waldbott, Detroit, Mich.

The Association welcomes to its membership any physician who is interested in the study of headache. Further information can be obtained from the Secretary at the Mayo Clinic, Rochester, Minn.

GUEST LECTURE SERIES IN PHILADELPHIA.

—Dr. Philip Mechanick, Acting Medical Director of Philadelphia Psychiatric Hospital, announces the second annual series of guest lectures for residents: Maurice E. Linden, M.D., Geriatric Psychiatry; Charles Brenner, M.D., Denial; Kenneth E. Appel, M.D., Psychotherapy; John Donadeo, M.D., Symbolism; Jacob A. Arlow, M.D., Ego; Kenneth T. Calder, M.D., Affects as Signals; Bertram D. Lewin, M.D., Dreams; Bernard Bandler, M.D., and Dexter M. Bullard, M.D., topics to be announced.

The program is under the direction of Dr. Morris W. Brody, Director of Resident Training.

FIRST INTERNATIONAL CONGRESS OF ENDOCRINOLOGY.

—The proceedings of this congress held in Copenhagen in July 1960 have been published in 2 supplements to *Acta Endocrinologica* accompanying volumes 34 and 35.

The first supplement contains abstracts of the symposium lectures and round table discussions with translations into interlingua and edited by Christian Hamburger. This supplement runs to 426 pages.

The second supplement contains abstracts of short communications and is edited by Fritz Fuchs. This supplement, exclusive of indices, runs to 1,358 pages.

These volumes are published by Periodica in Copenhagen, 1960.

FRENCH GOVERNMENT.—M. Raymond Triboulet, French Minister of Veteran's Affairs and member of the Cabinet of France on a goodwill visit to the United States tendered a reception for the Veterans Committee of the People to People program at the French Consulate in New York City, October 22, 1960. M. Triboulet presented to Dr. Winston E. Burdine, prominent Atlanta psychiatrist and past National Commander of the AMVETS, the Croix De Merite, Combatant Military Medal for his outstanding work on the People to People program. This decoration is one of the highest and most coveted of the government of France and is an expression of their goodwill and appreciation of Dr. Burdine's dedicated efforts on behalf of the Worlds Veterans Federation and his creation of better

understanding between the different peoples of the world during his visits to the U.S.S.R., France, and the major countries of the world.

INTRODUCTION TO ANALYTICAL PSYCHOLOGY.—University of California Extension announces its second residential workshop on "Introduction to Analytical Psychology for Clinicians."

The Conference will be held June 3-15, 1961, at the Asilomar Conference Grounds, Pacific Grove, California, 6 miles from Carmel and 125 miles from San Francisco.

The prerequisite is a Ph.D. or M.D. degree or equivalent in professional experience, and consent of staff, consisting of Bruno Klopfer, Ph.D., (Coordinator); Rivkan Kluger, Ph.D.; Joseph Henderson, M.D.; and Marvin Spiegelman, Ph.D.

The enrollment fee is \$95.00. A limited number of \$50.00 tuition scholarships will be available. Information concerning veterans benefits will be supplied on request. For further information write to Department of Social Sciences, University Extension, University of California, Los Angeles 24. The deadline for receiving applications is May 1, 1961.

INTERNATIONAL PSYCHOSOMATIC SEMINARS.

—A 3-months world cruise by the American President Lines visiting 20 or more foreign ports and leaving New York in October or November 1962 is planned, providing a sufficient number of qualified persons volunteer their services. The understanding will be to conduct teaching seminars in every port visited. Countries included will be Japan, Okinawa, Taiwan, China, Vietnam, Malaya, Ceylon, India, Pakistan, Egypt, Italy, Spain, France.

Reservations will have to be made well in advance and those interested should communicate with James W. McCartney, M.D., 223 Stewart Ave., Garden City, N. Y.

IN HONOUR OF DR. STANLEY COBB.

On October 14 and 15, 1960 the Massachusetts General Hospital arranged a programme which served the double purpose of dedicating the Stanley Cobb Laboratories for Research in Psychiatry, and the ob-

servance of the 25th anniversary of the Psychiatric Service of the hospital.

After a scientific session during the forenoon of the 14th the Dedicatory Programme began with a luncheon at the Massachusetts General Hospital at which Mr. Phillips Ketcham, President of the Corporation, Massachusetts General Hospital presided and the speaker was Seymour S. Kety, M.D., Research Director, National Institute of Mental Health and Member, Scientific Advisory Committee, Massachusetts General Hospital. The luncheon programme was followed by a tour of the Psychiatric Research Laboratories in the Warren Building, M.G.H.

The Anniversary dinner was held the same evening at the Harvard Club in Boston.

THE WORLD MEDICAL ASSOCIATION ELECTS OFFICERS.—At its 14th General Assembly held in West Berlin, Germany, September 15-22, 1960, The W.M.A. elected the following officers:

President (1960-61): Dr. Paul Eckel—Germany; President Elect (1960-61): Dr. Antonia Moniz Aragão—Brazil.

Members of Council (1960-63): Dr. J. G. Hunter—Australia, Dr. L. W. Larson—U.S.A., Dr. Antonio Spinelli—Italy, Dr. Hector Rodriguez H.—Chile.

Secretary General (1961): Dr. Heinz Lord.

The Council elected the following officers (1960-61): Chairman of Council, Dr. Gunnar Gundersen—U.S.A.; Vice Chairman of Council, Dr. Felix Worré—Luxembourg.

Executive Editor—*World Medical Journal*, Dr. Stanley S. B. Gilder—U.K.; Associated Editor, Dr. J. R. Gosset—France.

FOURTH LATIN AMERICAN CONGRESS OF MENTAL HEALTH.—This Latin American Congress will be held December 4-10, 1960 in Santiago, Chile.

The central theme of the Congress will be community organization and the programme will comprise several general headings including Mental Hygiene in relation to Public Health, to Education, to Social Disorganization, to Successive Life Periods.

Professor Agustin Tellez is President of

the Organization Committee; Professor Carlos Nassar G. is Secretary General.

Information may be obtained from Mottram P. Torre, M.D., Project Director, 162 E. 78th St., New York 21, N. Y.

NATIONAL TRAINING CENTRE FOR REMOTIVATION.—On October 4 at the APA designated the Philadelphia State Hospital as the National Training Centre for Remotivation. Dr. Robert S. Garber, chairman of the APA's Committee on Remotivation and Dr. John E. Davis, Commissioner of Mental Health for Pennsylvania, commended the work done in Remotivation at the Philadelphia State Hospital and the suitability of this designation.

Dr. Garber pointed out that the Remotivation programme, which is supported by the Smith Kline and French Foundation, has, by being introduced to some 600 nurses and aides in 35 hospitals by the Philadelphia training teams, been carried to approximately 2,200 other psychiatric personnel in about 100 additional hospitals. Dr. Garber particularly cited the work of Dr. Eugene L. Sielke, Superintendent of the Philadelphia State Hospital, and Miss Helen Edgar, director of nurses, for their leadership in the programme.

Other regional training centres have been established at the Central State Hospital, Norman, Okla.; Western State Hospital, Staunton, Va.; and the Essex County Overbrook Hospital, Cedar Grove, N. J.

INTERNATIONAL CONGRESS FOR INDIVIDUAL PSYCHOLOGY.—The Eighth International Congress for Individual Psychology was held at the Neuro-Psychiatric University Clinic of Vienna from August 28 to September 1, 1960. The main subject considered was: "Social Interest." Professor Dr. Hans Hoff, Honorary Chairman of the Congress, gave the opening address, in which he outlined the influence that Individual Psychology has had upon developments in the field of neuro-psychiatry.

More than 200 participants were registered. The following officers were elected:

President, Alexandra Adler, M.D., New York; Vice Presidents: Rudolf Dreikurs,

M.D., Chicago; Professor Oscar Spiel, Vienna; Dr. Victor Louis, Zurich, was re-elected General Secretary. The next International Congress will take place in 1963.

DR. NORMAN SLOAN.—Dr. Sloan died on October 6, 1960 at Doctors Hospital in New York City at the age of 43. He was born in Winnipeg, Canada, and was graduated from the University of Manitoba in 1942. He received a Master of Science Degree in Neurology from McGill University in 1949. Postgraduate training was at the Montreal Neurological Institute and the Columbia Psychoanalytic Clinic in New York. He was a staff psychiatrist and consulting neurologist at the Orangeburg State Hospital in New York from 1949-51, and a Research Fellow at the New York Psychiatric Institute from 1949-54.

In World War II he was a Captain in the Royal Canadian Army Medical Corps. In the past decade he had been active in neurophysiological research and had authored numerous articles in this field.

THE PROCESS OF SCIENCE.—In primitive societies explanation of natural phenomena—including human behaviour—was usually based on an assumption of supernatural forces. The assignment of supernatural causes for natural phenomena stemmed from the imagination of man based on his observations of nature. These pre-scientific ideas are not greatly different from the hypotheses which constitute the first step in scientific research. The difference between science and other processes of intellectual invention is that to scientists an idea is not regarded as a fact or as a truth

until it has met rigorous tests of validity.

The scientist calls a raw idea a hypothesis. After the idea has gathered sound supporting evidence it becomes known as a theory. Only after some kind of direct proof has been demonstrated, is the precious label of "fact" bestowed, and even that is tentative. Scientists must always be willing to strip away the credentials of a "fact" if new, conflicting evidence appears.

Science highlights what is true in large part by revealing what is not true, *i.e.*, what has failed the validity checks. The experimental methods of science free man from the confusing maze of conflicting opinion. It is as though the compasses by which man steered his various courses pointed helter-skelter in every way and science provided ways to test compasses.

ORT E. Reynolds, Director,
Office of Science,
Dept. of Defense.

FOUNDER PORTRAIT FOR CENTRAL OFFICE A.P.A.—Dr. Philip C. Rond, Associate Professor of Psychiatry, Ohio State University, Columbus, Ohio presented to the Central Office of the American Psychiatric Association on October 10, 1960, an oil portrait of Dr. William Maclay Awl, one of the 13 Founders of the Association of Superintendents of American Institutions for the Insane, and former superintendent of the State Hospital at Columbus.

This donation is gratefully received and it is hoped that arrangements may be made to place the portrait of Dr. Awl on view at the annual meeting of the A.P.A. in Chicago in May 1961.

DEFINITION

I think it might be well to substitute the term psychological medicine for psychiatry, in order to disidentify this branch of medical practice from the flotsam and jetsam on the psychiatric sea.

—C. CHARLES BURLINGAME

BOOK REVIEWS

AN INTRODUCTION TO CHILD PSYCHIATRY. By Stella Chess. (New York : Grune and Stratton, 1959, pp. 254. \$5.25.)

This brief but comprehensive survey of child psychiatry was written for newcomers to the field and for individuals who need a ready reference to the psychological problems of children. Using a simple and direct approach, the author outlines methods of evaluating children and their parents, enumerates the specific dynamics of various psychological problems, and reviews the current treatment of these problems.

A sizeable portion of this book is devoted to history-taking and to the problems of diagnosis. Many helpful specific recommendations are presented in this section which will help even the inexperienced therapist to get a more accurate, comprehensive picture of the whole problem of the child with emotional difficulties.

The discussion of the various categories of emotional problems is, perhaps, one of the book's greatest contributions. Avoiding lofty speculations, the author presents understandable formulations of the dynamics of many emotional disorders in a clear, logical fashion. This section is invaluable for individuals who have not had the clinical experience to provide them with working knowledge of the dynamics found in children with problems.

The last section of the book deals with the treatment of children with various problems. No one method of therapy is advocated, but the author objectively reviews the available methods of treatment of a wide range of problems, including organic brain damage, neurosis, and childhood schizophrenia. The issues connected with mental retardation are given adequate consideration.

The author has included a carefully selected bibliography at the end of each chapter. There is a helpful index of subjects.

This book is highly recommended as being just what the title says it is. Not only psychiatrists and pediatricians, but students in the related disciplines will find it very profitable.

RICHARD J. BEALKA, M.D.,
Minneapolis, Minn.

THE BIOCHEMISTRY OF DEVELOPMENT. By Jean Brachet. (New York : Pergamon Press, 1960, pp. 320. \$10.00.)

There has been no text on the biochemistry of development for some 10 years. Professor

Brachet's volume is therefore to be welcomed on this, as well as upon other grounds, as a most useful summary of the advances which have been made in this field during the last decade—a decade which has witnessed heroic progress in the biochemistry of development. The author's treatment is detailed, and he deals with gametogenesis, spermatogenesis, fertilization, cleavage, invertebrate and vertebrate eggs, biochemical interactions between the nucleus and the cytoplasm during morphogenesis, and with the biochemistry of differentiation. There are full chapter bibliographies, and excellent author and subject indexes.

To anyone interested in any way living things increase in complexity, this is an indispensable volume.

ASHLEY MONTAGU, Ph.D.,
Princeton, N. J.

RECENT ADVANCES IN NEURO-PHYSIOLOGICAL RESEARCH. Edited by D. Ewen Cameron and Milton Greenblatt. (Washington : American Psychiatric Association, 1959, pp. 136. \$2.00.)

This paper-bound volume is Number 11 in the APA series of *Psychiatric Research Projects*. It contains the scientific papers and discussions of a Regional Research Conference held November 8-9, 1957, in Montreal under the joint auspices of the Department of Psychiatry, and the American Psychiatric Association's Committee on Research 1957-58. The titles and authors are : "Patterns of Intra-Familial Communication" by Nathan B. Epstein, M.D. and William A. Westley, Ph.D. ; "Issues in a Therapeutic Organization" by Milton Greenblatt, M.D., and Daniel J. Levinson, Ph.D. ; "Types of Memory Dysfunction in Senescence" by V. A. Kral, M.D. ; "The Memory Defect in Bilateral Hippocampal Lesions" by Brenda Milner, Ph.D. ; "Sleep Threshold Techniques" by C. Shagass, M.D., and A.B. Kerenyi, M.D. ; "The Use of the Electrogastrograph in Problem Identification in Psychoneurotic Patients" by H. S. Morton, M.D., J. F. Davis, M. Eng., M.D., and Z. J. Lipowski, M.D. ; "Activation : A Neuropsychological Dimension" by Robert B. Malmo, Ph.D. ; "Neurolathyrism in the Rhesus Monkey Induced by B, B' Iminodipropionitrile" by Edward M. Gore, Frazer V. Hadley, Richard Tislow, M.D., and Joseph Seifter, M.D. ; "A Biological Basis for Psychopathology" by Howard Liddell, Ph.D.

A.G.

THE RELUCTANT SURGEON. A BIOGRAPHY OF JOHN HUNTER. By *John Kobler*. (Garden City, N. Y.: Doubleday & Co., 1960, pp. 359. \$4.95.)

If the meaning of John Hunter to science—particularly medical science—and therefore to humanity has been too little appreciated outside the professional community, this book should serve to repair the flaw in the information of otherwise literate persons.

The author recalls some of the titles that have been bestowed by scientists and scholars upon this 18th century Scot (1728-1793), and in his book he tells the reasons. John Hunter has been variously called "the most important naturalist between Aristotle and Darwin," "a philosopher whose mental grasp embraces the whole range of nature's works," "with the exception of Hippocrates, the grandest figure in his profession," "a urologist a hundred and fifty years ahead of his time," "the first to teach the science of surgery as Paré two hundred years before had advanced the art," "the Shakespeare of medicine," "one of the greatest men the English nation has produced." Kobler also remarks that the *Encyclopedia Britannica* "devotes more space to Hunter than to Linnaeus, Paré, Harvey, Jenner, Lister, Simpson, Pasteur, Freud, or Fleming."

The brothers William and John Hunter were about as unlike as any two men could be. William was well-behaved, ambitious, snobbish, perhaps a trifle "unco 'guid." John was runty, red-haired, wayward, the youngest of 10. William was university trained and destined for the Church, but considered himself unfit "to wag my pow in a pu'pit" and soon became medical apprentice to William Cullen. At 21 he was in London, a favorite pupil of Smellie, the famous man-midwife, as accouchers were disrespectfully called, and on his way in a brilliant career as surgeon, obstetrician, anatomist, with many students taking his lectures and demonstrations. John, intensely curious about everything growing, animals and plants, was unmanageable in school, was taken out at 13 and had no further formal education. At 20, and still apparently without prospects, he was taken on by his brother William in London as an assistant.

Here he was promptly engrossed in the mysteries of the human body, and became expert in anatomising—also in securing the necessary material. He never engaged in Burkeing but he knew the ways of the resurrection men and quite probably indeed shared them.

During 12 years together "the brothers kept up a rate of activity that defied the limitations of time and human energy, working sometimes

in collaboration, sometimes independently, they undertook 17 major investigations and innumerable minor ones, invented surgical procedures, taught ever-increasing numbers of students, pursued their own professional education, and treated patients."

John's semi-literacy was his main handicap. "Few scientists have ever been so poorly equipped with the tools of communication." But his dissections and demonstrations were eloquent. "I turn over the volume of nature," said John Hunter, and his penetration into that volume went beyond that of his contemporaries. He anticipated Darwin "by almost 100 years in enunciating the principle that the human embryo at each stage of development resembles the mature form of some lower species."

Both brothers were tireless collectors, but John went far beyond William; the building of his museum of comparative anatomy and natural history became a real addiction, running him heavily into debt. "It was the most important of its kind before or since." The Hunterian Museum is now the property of the Royal College of Surgeons. The Government had purchased it for £15,000, "about a fifth of what John spent on it."

The first private anatomical school in America was established by William Shippen of Philadelphia on his return in 1762 from several years study with the Hunters.

Contrasting with John, William had social as well as professional aspirations. His practice had become largely obstetrical. He made man-midwifery not merely respectable, but fashionable. He was sought after among the nobility and at Court; he delivered 10 of Queen Charlotte's 15 children.

John had seen service in the Seven Years' War while William thrived at home. He had replaced his brother by a new assistant and an estrangement began. John had hard grubbing, with his army pension of 5 shillings a week. Gradually, he reestablished himself as surgeon, investigator, innovator and collector, and in due course—again in contradistinction to William—considered the problem of marriage.

Never was a stranger love affair than that of John Hunter and Anne Home. Discussing their marriage plans, it was John who put off the date and gave the wrong reason. It wasn't his low economic status, but an experiment on himself he wanted to try—to find out, if he could, whether syphilis and gonorrhoea were simply, as he thought, different manifestations of one disease. He infected himself from one of his venereal patients, obviously suffering

from gonorrhoea. He watched for symptoms of syphilis in himself and was not disappointed. His patient harbored both organisms. He allowed the disease to run its course for three years before "curing" it, as he believed, with mercury. Four years after the initial postponement, John and Anne were happily married. Of four children of the first five years of marriage, two died in infancy, and two reached adult life, both sooner or later becoming mental cases.

Throughout his professional career, John was enviably associated with St. George's Hospital where students flocked to him from other doctors who walked the wards. As a lecturer, however, he was hopeless at first and never a success. On one occasion when he found an audience of one, "he dragged a skeleton into the room, seated it, and with a pawky grin began: 'Gentlemen . . .'"

Early American medicine owed much to William and John Hunter, especially to the latter. "Nearly the whole of Colonial physic, surgery, and obstetrics, as they began to move away from empiricism reflected Hunterian doctrines." It was William Shippen who led the parade of Colonial pioneers to the famous brothers in London. The debt was formally acknowledged when Benjamin Franklin, president of the American Philosophical Society, proposed the election of John Hunter as an honorary member of that distinguished brotherhood; and it was done.

At home there were envious enemies. John was so far in advance of most of his contemporaries in his physiological and anatomical researches, in his prodigious industry and in his startling and successful innovations in surgery—while adhering to his rule never to perform an operation that in like circumstances he would not have done upon himself—that jealousy and hostility in lesser men were to be expected. He was not boasting when he said: "I am a pigmy in knowledge, yet I feel as a giant compared to these men."

Kobler's book is a vivid story of the dramatic life of John Hunter. But it is much more; it carries through the parallel lives of the two brothers, and it reflects the social climate of the two countries so intimately involved, with their mutual prejudices. Numerous well known figures whose paths crossed those of the Hunters also have their exits and entrances and personalities, and events fit into their places as related to that extraordinary individual who was John Hunter. And again he could say without boasting: ". . . when I am gone there will not soon be another John Hunter." This

book, excellent as it is, has no photograph of the hero.

In the coat-of-arms of the family was the motto: "Hunter blow your horn." In their several ways both William and John did.

C. B. F.

THE OFFICE ASSISTANT IN MEDICAL PRACTICE.

By *Portia M. Frederick and Carol Towner.*

(Philadelphia: W. B. Saunders Company 1960, pp. 407, \$5.25.)

Essentially a teaching aid for schools where there are training programs for medical assistants, it will also serve as a reference manual for those working in doctors' offices and learning their duties on the job. Likewise, it will help busy doctors in training their office assistants, outlining as it does not only office procedures but also basic medical techniques and knowledge such as how to give injections, prepare medications and assist in physical examinations.

P. P. T.

REHABILITATION OF THE MENTALLY ILL—

SOCIAL AND ECONOMIC ASPECTS. Edited by *Milton Greenblatt, M.D. and Benjamin Simon, M.D.* (Washington, D. C.: American Association for the Advancement of Science, 1959. pp. 260. \$5.00.)

The volume brings together papers presented December 29 and 30, 1957, at a symposium in Indianapolis, sponsored by the American Psychiatric Association, the Section on Social and Economic Sciences of the American Association for the Advancement of Science and the American Sociological Society. The book is a readable, concise presentation of current thinking and ideas of a group of men closely associated with developments in the field.

The content area of rehabilitation of the mentally ill is reported in Part I, by Ewalt, Greenblatt, Hunt and Simon. Greenblatt and Simon state that the maximum rehabilitation effort in the hospital may be evoked through greater understanding of the institution's social organization. Mental illness reflects the harsh conditions imposed by society upon its citizens. Basically, the conditions are treatable and preventable through social change. The hospital as a social organization may aid or retard recovery. Interpersonal relationships and therapeutic use of self are underscored as important factors to this end. Charlotte Green Schwartz, in discussing this section says that effective help to the mental hospital patient requires the development of community pro-

grams. However, treatment and rehabilitation, no matter how modern the mental hospital may become, will be incomplete if the process of helping patients return to a place outside the hospital is confined to intramural preparation alone.

The philosophy of rehabilitation is discussed by Martin in Part II, and program development by Notman. The discovery and analysis of the patient's assets (in contrast to "treatment," which is a direct attack on the disability), is the aim of the rehabilitation process. Notman notes there are three teams within a mental hospital on which the psychiatrist may serve—the custodial, the therapeutic and the rehabilitative. The psychiatrist joins one or the other of these teams and his presence on it gives it dominance. The one selected becomes the one with the most status in the hospital. The training of the psychiatrist leads him often to choose the therapeutic team. His lack of understanding and interest in the areas outside of his own direct therapy, often hampers the rehabilitation of patients. Work programs are discussed by Landy and Raulet, ancillary therapies by Key, and Wittkower and Azima advance a hypothesis for occupational therapy formulated in dynamic terms. The potential of work and tangible rewards serve as motivating factors. The value of realistic work is highlighted. John Cummings in his discussion indicates that rehabilitation helps overcome handicaps. In psychiatric disorders those handicaps may be orientation disturbances, communication disturbances or the loss of group skills.

Part III covers the transition from hospital to community. Greenblatt briefly presents rehabilitation goals. The section on vocational rehabilitation by Temple Burling is a discussion of Sivadon's transitional home in Paris for male patients who live together while adjusting to employment. Vocational rehabilitation techniques or current research projects in the vocational area are not presented.

Brooks ably describes a Half Way House with helpful details for day to day problems that arise. Knudson makes brief mention of industrial therapy and the V.A. program within the Veterans Administration for employing patients while still in the hospital as an aspect of their preparation for a job in the community. Carmichael presents his work in after care with a brief discussion of the Fountain House Social Center Program. Hewett, in discussing this section, indicates that the transitional programs are aimed at reducing the disability induced by prolonged hospitalization.

The implications of rehabilitation are presented by Gruenberg and Huxley who suggest

methods for organizing staff interaction and inter-agency communication.

Kris studied 250 psychotic patients in an after care clinic of whom 189 were schizophrenics and showed that one-third of untreated patients suffer relapses and must return to the hospital. When patients were maintained on drug therapy, only 10% return.

Black describes the Altro sheltered workshop program as a resource for rehabilitation and Olshansky, presented a study on employer receptivity to hiring former mental patients. Three-fourths of 200 interview employers expressed a willingness to have ex-patients work for them, but only 27 had knowingly employed an ex-mental patient. Olshansky suggests that instead of educating employers it might be more profitable to concentrate effort on the better preparation of the patient for release. Knight Aldrich suggested that all rehabilitation programs be carefully studied for leads as to areas that might prove profitable for research and might offer reasonable rewards from expended money.

The book is a valuable document, outlining the progress in the field of psychiatric rehabilitation and some of the problems and issues that are its major concern. It is recommended reading for psychiatrists in mental hospitals and for those who work with adults in community psychiatric facilities. It will be of use to psychiatrists working in public health programs, and to those with teaching responsibilities. All workers in the field of psychiatric rehabilitation will also find it useful, not as a source book for guidance in program building but as a thoughtful assessment of the principles upon which rehabilitation rests and of the progress made to date. The book has more coherence and more substance than most conference reports.

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HYSTERIE, REFLEX UND INSTINKT. By Ernst Kretschmer. (Stuttgart: Georg Thieme Verlag, 1958, pp. 148 Seiten, 2 Abbildungen, 8°, kartoniert. DM 9.80 (\$2.35),

Ganzleinen DM 12.80 (\$3.05.)

Ernst Kretschmer, who established his fame in the 1920's through his work on constitutional differences in schizophrenic and manic-depressive patients, discusses hysteria, reflex and instinct in this book. Hysteria is considered a reaction type which utilizes certain reflex and other biologically patterned mechanisms. Even a reader fully familiar with the German language finds it difficult to grasp the content of a not too well organized little volume. It is

impossible to convey the ideas to the American reader, since American psychiatry has followed such different trains of thought. The present volume represents the sixth enlarged and improved edition of a small volume which was published decades ago, and seems no longer entirely up to date.

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A TEXTBOOK OF MEDICINE. 10th Ed. Edited by Russell L. Cecil, M.D., Sc.D., and Robert F. Loeb, M.D., Sc.D. (Philadelphia: W. B. Saunders, 1959, pp. 1665, \$16.50.)

The sections on mental illness in such a deservedly popular textbook as "Cecil and Loeb" have an importance out of proportion to their brevity. This book is the first recourse of many students and graduates faced with a clinical problem. In general the sections on psychiatric disorders are well done. The authors of the discussions of neuroses and psychoses avoid the pitfalls of dogmatic, overclassified description and verbosely speculative interpretations. The common somatic symptoms which bring mentally ill patients to general physicians and specialists are properly emphasized. These symptoms test skill in diagnosis but of even more importance they challenge the physician not only to discover the patient's underlying personal difficulties but also to help him with them. The excellent section on the treatment of neurotic patients should encourage non-psychiatrists to develop their abilities in psychotherapy. In a future edition it would be worthwhile saying something about the place of the general physician in the care of chronically psychotic patients, particularly when increasing numbers are being discharged from mental hospitals to their homes.

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KLINISCHE PSYCHOTHERAPIE INNERER KRAUKHEITEN. (Clinical Psychotherapy of Internal Diseases) (Berlin-Göttingen-Heidelberg: Springer-Verlag, 1959, DM 18.80.)

This small monograph, 68 pages long, consists of 6 lectures given at the opening of the Department of "Clinical" Psychotherapy of Internal Diseases at the University of Freiburg, Germany. (The term clinical would be best translated as: in a hospital setting.) The first 2 lectures were given by psychiatrists: J. H. Schultz, who is known by his book about the Autogenic Training, relaxation exercises as a form of psychotherapy; and, H. Goepfert, who wanders in his lecture through many fields

starting with the problem of the soma-psyche dualism and soma-psyche unity, discussing Freud, Weizsäcker, Jaspers, the existentialists, and the question whether there can be a psychotherapy of the psychoses. His leitmotif is: to learn from every school of psychotherapy. Though he is in full agreement with the desirable convergence of psychiatry and internal medicine he, understandably enough, sprinkles his lecture with warnings.

The next 4 lectures were given by 4 internists who worked in this newly opened department. They concern the scientific basis of a psychotherapy of internal diseases and several case reports. The lectures are on a high level, stimulating, speculative and hence, occasionally, confusing. It may be illustrative to mention that in the bibliography of the third lecture you find not only Franz Alexander's Psychosomatic Medicine but also Kant's Critique of Judgment. The authors stress that their research and their practical work are first attempts to clarify a new concept of the nature of disease; to pass, to return and to re-pass the frontiers between internal medicine and psychiatry. They also want to help the general practitioner in regard to understanding and treating his patients in a broader and more intensive way than before.

While I was reading the monograph I was wondering whether there are attempts in Germany, as they have now started here, to make the medical student familiar with the problems of psychosomatic medicine. But I did not find any mention of this.

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PROGRESS IN NEUROLOGY AND PSYCHIATRY. Vol. 14. Edited by E. A. Spiegel. (New York: Grune & Stratton, 1959, pp. 656, \$12.00.)

For the fourteenth consecutive time a volume has been published as a review of the year's progress in the fields of neurology and psychiatry. In 36 chapters, 60 contributors have surveyed the current productions, making reference to over 4000 publications.

The subject is broadly divided into 4 sections: Basic Sciences, Neurology, Neurosurgery and Psychiatry. A compilation of this nature will serve a variety of purposes. As has been the case with previous volumes, it should find a broad use amongst those interested in neurology and psychiatry, either for the purpose of a leisurely ramble through the recent literature, or for the detailed examination of a more limited field of interest.

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VICTOR VANCE ANDERSON

IN MEMORIAM

VICTOR VANCE ANDERSON 1878-1960

On July 26, 1960, the Association lost one of its oldest Life Fellows and best known members in the death of Dr. V. V. Anderson in his 82nd year. He died at his home at Staatsburg-on-Hudson, N. Y. on the grounds of the School he had founded and loved and of which he had been active as Director and at work with the students until a bare two months before the end.

Dr. Anderson was born at Barbourville, Kentucky, December 26, 1878. He came from a family with strong medical traditions. His maternal grandfather, Dr. Oliver Harndon, was one of the pioneer surgeons in Kentucky, several of his uncles were physicians and he, himself, was the forty-second doctor in the immediate connection. Before he was out of grade school, his inclinations toward medicine were reinforced by working in the pharmacy of one of his uncles, who encouraged him in that direction. He attended Union College in Barbourville, where he achieved a distinguished academic record, and graduated from the University of Louisville Medical School in 1903. He was elected to the Honor Medical Fraternity, Alpha Omega Alpha. He entered general practice in Lynchburg, Virginia, but this was not a city practice as we understand it today, for Dr. Anderson described frequent trips on horseback or by horse and buggy into the neighboring country and the long hours spent on these calls in all sorts of weather and at all times of the day and night. He was known not only as a good diagnostician and therapist, but as a man vitally interested in his patients and in their everyday problems. With this background of experience it is not surprising that he should be specially intrigued by the understanding of human behavior offered by psychology, and in 1911 he went to Harvard University for training in psychiatry. In 1913, while he was on the staff of the Boston Psychopathic Hospital, he was selected from 120 applicants to become the Medical Director of the Psychiatric Clinics of the Municipal Court

in Boston, a unique position in the medical and legal world at the time. Three years later he obtained the Master's Degree in Psychology at Harvard.

In 1918, Dr. Anderson was appointed Associate Medical Director of the National Committee for Mental Hygiene. His first assignment was the direction of mental health surveys, which involved investigations of the incidence of mental disease and mental deficiency and the facilities available to deal with the problems. In 1922 he was placed in charge of the organization and development of child guidance clinics and was instrumental in the establishment of the first such clinics in several major cities in the United States. Two years later, in 1924, he left the National Committee to become Director of Medical Research for the R. H. Macy Department Store in New York City, a position which he held for 7 years. In the meantime, he had laid the foundations for the School which bears his name, not only figuratively speaking in the sense of developing an ideology and methodology, but also literally in the sense of purchasing land and buildings, collecting a staff and enrolling a few students. In 1931, he began to devote his full time and energy to the School and its progress continued to be his major interest and exclusive professional responsibility for the rest of his life. When he married the present Mrs. Anderson in 1930 after the death of his first wife, the School became a family project. For many years Mrs. Anderson has served as business manager, and Dr. Anderson's only daughter by his first marriage is the wife of the headmaster.

Dr. Anderson was the author of two books, *Psychiatry in Industry* and *Psychiatry in Education*, the first of which, published in 1929, has been translated into several foreign languages, including Chinese, and is still required reading in some colleges. He contributed chapters to *Why Men Fail* edited by Dr. Morris Fishbein and Dr. William A. White, *The Healthy*

Mind by Henry B. Elkind and wrote a number of papers on the various phases of psychiatry in which he was interested. He was one of those invited to contribute to the Centennial issue of the *American Journal of Psychiatry* in 1944, and wrote the article "Psychiatry in Industry" for that special issue. He was an active member of many scientific societies, including the American Orthopsychiatric Society, of which he was one of the founders and the first presiding chairman, the American Psychopathological Association, the American Academy of Child Psychiatry, the New York Academy of Sciences, the Progressive Educational Society, the Academy of Religion and Mental Health, and the New York Society for Clinical Psychiatry in addition to the local and state societies and the American Medical Association. His alma mater, Union College, honored him with the degree of Doctor of Laws in 1935, and in 1953 he was awarded the Fifty Year Service in Medicine Certificate of the Medical Society of the State of New York.

The varied aspects of Dr. Anderson's professional life might seem incongruous as a preparation for a major career in the application of psychiatry to education. Diametrically opposed to the idea of opportunism or purposeless drifting, Dr. Anderson had planned his future carefully and conscientiously. His fundamental interest in people, stimulated during his years of country practice, naturally led to the study of psychiatry, and his association with the courts to an especial concern with people who were poorly adapted to society. His activities with the Mental Health National Committee indicated the dimensions of the problem and focused his attention on children and adolescents rather than adults. Finally, his experience in industry showed him, on the one hand, why seemingly promising workers fell short of expectations and, on the other, what might be done with the apparently inadequate individual to bring out his highest potential. With this background, the step to the foundation of a school operated under psychiatric principles is not only logical, but, perhaps inevitable. Dr. Anderson loved flowers and poetry and sometimes described himself as a dreamer, but he was emphatic

on the subject of translating dreams into action and was an outstanding exponent of his theory.

His philosophy was essentially an expansion of the family doctor approach to human problems. Psychiatric therapy, for him, was not merely a matter of obtaining personality integration in an abstract sense. He believed that the well integrated person must be able to relate to and communicate with his fellows, that he must have a goal attainable only by strenuous effort and that, in the course of the struggle the patient's life should be constructive and productive. Although not pessimistic about adult problems, he felt strongly that the best opportunity for helping people was to be found by treating them in their earlier, more plastic years. This, of course meant the school years, and he conceived of education as a partner with psychiatry. He placed less emphasis on formal psychotherapy than on human associations or what is often called milieu therapy, feeling that the latter was a more effective tool for the majority of his patients, though he certainly used and did not disparage individual psychotherapy in specific cases.

Dr. Anderson will be remembered not so much for his professional achievements in a narrow sense, as for his character. The sterling qualities of honor and uprightness which distinguished him are becoming rarer these days, and are often less highly regarded than the more meretricious scientific or pseudo-scientific achievements which have been the sole claim to recognition of many lesser men. His monument is his ideals embodied in the Anderson School, not as a perishable structure of bricks and mortar, but as an expression of ideals which have influenced profoundly, and will continue to influence the minds and actions of its students. One of them has written a few lines quoted in the Headmaster's memorial address, which might well serve as an appropriate epitaph. "His complete freedom from malice or pettiness, his grandeur of outlook, his wonderfully clear sense of justice, always tempered by warm humanity and compassion will forever be his fond memorial in the hearts of all who knew him." *Requiescat in pace.*

Leslie R. Angus, M.D.

REVIEW OF PSYCHIATRIC PROGRESS 1960

HEREDITY AND EUGENICS

FRANZ J. KALLMANN, M.D.¹

Productivity in the gradually merging branches of cytological, microbial and biochemical genetics was characterized by judicious consolidation, technical realignment and selective expansion during the past year. With the consequent increase in the number of interdisciplinary research meetings and specialized genetic symposia came an equally sharp rise in the output of expertly edited conference proceedings, timely reviews and promising new research reports.

Published symposia covered a whole galaxy of topics, including cell culture and biochemical genetics (1, 25, 61, 71), the structure and functions of the cell and cell nucleus (4, 21, 40), the cellular aspects of immunity (72) and tissue homotransplantation (69), the genetics of cancer (57), aging (60) and congenital malformations (73), and the evolutionary, molecular and neurophysiological phenomena of behavior genetics (5, 19, 31, 63, 65, 66, 67). *Still unpublished* at the time of writing this review were the A.A.A.S. and A.P.P.A. symposia on the genetics of aging (Chicago, December 29 and New York, February 20), the latter with the reviewer's Samuel W. Hamilton lecture; the symposia of the American Eugenics Society on human twinning (Princeton, April 28-29), that of the Eastern Psychiatric Research Association on psychiatric correlates of enzymatic and hormonal disturbances (New York, November 5), and that of the New York Academy of Sciences on genetic perspectives in disease resistance and susceptibility (New York, November 17-18); also the general genetic symposia at the University of Utah (Salt Lake City, May 13-14), Western Reserve University (Cleveland, October 10-12), the

Mayo Clinic (Rochester, October 12), and the Kaiser Foundation Hospitals (San Francisco, October 14-15). An experimental teaching session in molecular and chromosomal genetics conducted jointly by A. Bendich and this reviewer was a special feature of the APA meeting at Atlantic City.

Worldwide cooperation in the rapidly moving field of cytogenetics was effectively promoted by an international conference held at the University of Colorado in April (2). By introducing a unified system for numbering the 46 human chromosomes, the so-called *Denver System*, the conference cleared up the terminological smog emitted by widely disparate classification methods.

In the group of cytogenetically identified *abnormalities in sexual development* due to the loss or addition of a sex chromosome, appreciable progress was made in extending the analysis of chromosomal disarrangements beyond the previously established triad of Klinefelter's syndrome (chromatin-positive males with testicular dysgenesis and an XXY-sex chromosome pattern), superfemaleness (sexually underdeveloped females with two sex-chromatin patches and three X-chromosomes) and Turner's syndrome (chromatin-negative "females" with ovarian agenesis and only 45 chromosomes including one X-chromosome). Ferguson-Smith's team (14) and Muldal and Ockey (41) described special Klinefelter variants with XXXY- and XXYY-sex chromosome complements, respectively, and Lanman, *et al.* (36) reported another case with 48 chromosomes (trisomy of a small autosome and an extra X-chromosome) that showed the symptoms of both mongolism and Klinefelter's syndrome. While the XXXY "males" with two sex-chromatin bodies were found to be grossly defective (IQ below 20), association of Turner's syndrome with mental

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deficiency was observed by Fraser, *et al.* (17) in no more than 0.7% of mental defectives. Other informative reports included the history of a young girl with hemophilia who was classified as an XY-intersex, that is, a male who presumably underwent a process of sex reversal(44), and the case of a hermaphrodite who had a supernumerary chromosomal fragment in addition to a normal karyotype of 46 chromosomes including two X-chromosomes(13).

The cytogenetic classification of *mongolism* (trisomy of chromosome 21) was complicated by the observation that mongoloid symptoms may in some instances arise from reciprocal translocation between two of the smaller autosomes(15, 49, 50). In one case, a translocation seemed to have occurred between chromosomes 15 and 21. In another case, the apparently healthy father of a mongoloid boy had 47 chromosomes with trisomy of chromosome 19, or its equivalent in the Denver System, while the mongoloid patient was found to have a complement of 46 chromosomes with a translocation between two chromosomes 21. The same kind of translocation was observed in the family of an English woman who had three mongoloid grandsons, two brothers and their maternal cousin(6).

Reports on other types of *autosomal trisomy* in persons with multiple developmental defects (including Sturge-Weber's syndrome) also appeared in increasing numbers. Noteworthy in this category were the chromosomal disarrangements placed on record by Edwards, *et al.*(9), Patau, *et al.*(47), Hayward and Bower(30) and Sandberg, *et al.*(53). Even more remarkable were two Swedish cases with complements of 49 and 69 chromosomes, respectively(3, 16). Perhaps the most spectacular observation with far-reaching clinical implications was the detection by Tough, *et al.*(68) of extensive chromosome damage in two male patients who had received X-ray treatment for ankylosing spondylitis ("single dose of 250 rads limited to the skin over the spinal column").

While the output of *specialized textbooks* embodying these most recent advances in medical genetics lagged behind, commendable exceptions were new books on biochemical and radiation genetics by Harris

(29), Strauss(59), and Wallace and Dobzhansky(70), a German book by Lenz(38), a new edition of Stern's standard textbook on human genetics(58), and a concise introductory book for the general public by Penrose(48), despite its skeptical attitude toward the usefulness of twin studies. Introductions to quantitative genetics were contributed by Falconer(12) and Osborne and DeGeorge(46), and to behavior genetics by Fuller and Thompson(20). Provocative views about the influence of evolution and heredity on progress and survival in the current world scene were expressed by Hardin(28) in an absorbing book and by Muller(42), Simpson(54) and Wright(74) in some equally intriguing articles.

Prospects for the uphill struggle of *experimental genetics* to bridge the molecular and cellular levels of organization were scrutinized by Lederberg(37) in his Nobel Prize address from the standpoint of bacterial genetics, and by Ehret(10) on the basis of electron microscope studies. Promising steps toward the overall objective of genetic research—the mapping of human chromosomes through a full understanding of the biological activity of DNA—were taken by Sidman(64) with a highly refined organ culture technique (retinal dystrophy in mice), as well as by Bendich(64) through ingenious observations on biochemical changes which were seen on invasion of cultured human (HeLa) cells by extraneous DNA, either microbial or human (isotopically labeled DNA from human leukocytes and transforming DNA from pneumococcus). At the cellular level, variations in native resistance to certain infections (*i.e.*, pulmonary tuberculosis) were confirmed by the experimental work of Lurie(39) in rabbits as being determined by the activity pattern of reticuloendothelial cells.

In the sectors of *clinical genetics* bearing on psychiatric problems, the crop of research data which ripened to the point of publication was rather sparse last year. There were three investigations apiece dealing with Huntington's chorea(7, 43, 45) and phenylketonuria(22, 32, 51) and two serial studies of relatives of epileptics, one by Inouye(33) in Japan (families of 40 epileptic twin index cases) and the other

by Eisner and Livingstone(11) in this country (3,361 relatives of 669 epileptics). While the search for the primary biochemical defect in Huntington's chorea remained as inconclusive as that for readily identifiable chromosomal markers in phenylketonuria, the two epilepsy studies confirmed the operation of some genetic factor (biochemically unidentified) in certain "chronic" forms of the disease, especially in cases with a disease onset before the age of 16.

Other research reports dealt with the anthropometric characteristics of 44 young "war mulattoes" born out of wedlock to white Italian women during the occupation years(23); an Australian family with 11 cases of an apparently autosomal, dominant form of acute intermittent porphyria in three generations(8); a Swedish series of 119 same-sexed twin pairs with nocturnal enuresis in one or both partners, showing higher prevalence rates (a) for twins than for nontwins, (b) for two-egg than one-egg twins and (c) for girls with a male partner than for those with a female partner(26); and the second volume of population data (schizophrenia, mental deficiency, consanguineous marriages) for the two Swedish islands investigated intensively by the research unit of Hallgren and Sjögren(27). In a single pair of one-egg twins observed by Swanson(62), both partners made suicidal attempts, only one succeeding.

Regarding the genetic theory of schizophrenia, no decisive progress was made either in identifying the hypothesized mutational (metabolic) change in schizophrenics (18, 34, 56) or in disclaiming it altogether (24, 34). Rosenthal(52) found no statistical evidence for Jackson's nebulous "confusion of ego identity" theory(34) which would imply a higher frequency of the illness in twins than in non-twins, while Böök (34) considered the family and twin data accumulated over a period of more than 40 years as "consistent enough to provide a sound basis for the genetical theory of schizophrenia."

The "surging wave of advance . . . in revealing many of nature's deepest metabolic secrets"(35) was reflected by the fact that the 1960 Nobel Prize in physiology and medicine was awarded to another distinguished duo of experimental biologists, M.

Burnet and P. B. Medawar. The Albert Einstein Gold Medal was conferred on Leo Szilard for his outstanding work in nuclear physics and microgenetics, the 1960 Kimber Genetics Award on George W. Beadle, and the Samuel W. Hamilton Medal on this reviewer for research on the genetics of aging. The 1960 Galton Lecture was delivered by Eliot Slater on "Galton's Heritage"(55), while the 1960 R. Thornton Wilson Awards in genetic psychiatry were shared by Aaron Bendich and Sidney C. Werner(64).

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NEUROPHYSIOLOGY, ENDOCRINOLOGY AND CHEMISTRY

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Neurophysiologists are studying the mechanisms of motivation, drive, reward, punishment and emotion in a way exceedingly relevant to psychiatry. The terminology is complex and foreign to that of psychiatric literature. Summaries(1) and reports of symposia(2, 3) give the best introduction to this field. It will be recalled that the cerebral cortex of primates may be divided into a phylogenetically old, 2 cell layered cortex, a new or 6 layered cortex and an intermediate type. The new cortex growing up in the center of the old cortex has expanded greatly in primates and is related in great part to long distance sensory projection systems. It is accessible to exposure for experimental purposes and to its function has been attributed the superiority of man's intellectual capacities. This cortex is now somewhat deemphasized in experimental work as it has been possible to introduce microelectrodes in the other types of cortex and learn something of their activity. The old cortex, which Adolf Meyer called the purse string structure since it has been pushed down to surround the brain stem, is often known as the limbic lobe. Its limits are poorly defined but it includes the septal nuclei, subcallosal gyrus, olfactory tubercle, diagonal band, amygdala and hippocampus. This cortex has extensive reflex connections with the hypothalamus and brain stem through the medial forebrain bundle and fornix. Until recently its function has been a mystery. The intermediate cortex forms another ring structure between the old and new cortex. From a phylogenetic point of view it is a relatively recent development. Again its limits are hazy but it includes the cingulate gyrus, insula, hippocampal gyrus and the base and

probably a large part of the rostral portion of the frontal lobe. It appears to be related closely to the old cortex and serves to elaborate its activity.

The roles of the old cortex are now studied actively and certain useful hypotheses are emerging. MacLean(2) thinks that it is concerned with two basic life principles, self-preservation and preservation of the species. Thus stimulation of the amygdala and its related structures gives rise to alimentary automatisms such as chewing and retching from one point, whereas from another point it elicits searching, angry or defensive behavior that is required in the search for food and the struggle for survival. Stimulation of certain places in the hippocampus, cingulate gyrus and septum results in behavior conducive to preservation of the species, such as pleasure reactions, grooming behavior and sexual manifestations, including penile erections. Similar sexual responses can be obtained along projection pathways that follow a course from the septum through the medial preoptic region into the medial forebrain bundle. Leake(2) pointed out that repeated stimulation of this pathway does not lead to inhibition. Olds(2) reported that animals with an electrode in this region will self stimulate for periods of as long as 26 hours without any apparent lessening of the effect of the stimulus. When they stop, they stop because they collapse.

Lilly(2) discussed a small area in the septum, possibly representing the medial forebrain bundle in relation to lack of fatigue. A monkey with an electrode in this area will stay awake and self stimulate for 48 hours without sleep. The sexual system here seems to be combining the effect of the powerful energizing avoidance system and the extreme pleasure of the rewarding sys-

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tem. Olds(2) spoke of a common denominator of function in this area and the relation of all drives to a common mechanism of reinforcement. Slight movement of the electrode in the hypothalamic, midbrain or limbic region can bring about sharp differences in elicited behavior, but there is always a positive reinforcement of behavior. Olds (2) has shown that a region yielding a high self stimulation ratio runs in a broad path along the medial forebrain bundle region in the ventrolateral floor of the hypothalamus. Bond(2) thinks of the septum as a general system for energy coming upward and going to various areas that participate more selectively in different types of behavior. Olds stated that anatomically the septal area is a junction on a two way route between amygdala and hypothalamus and also a junction on a two way route between hippocampus and hypothalamus.

The small portion of this review related to endocrinology may follow here, related to the neuroendocrine aspects of sexual activity. Sawyer, *et al.*(1) studied the neural events leading to the release of gonadotrophic hormone from the pituitary producing ovulation. In the rabbit, excitation of vaginal receptors causes ovulation. Such stimulation is followed by alterations in brain wave activity in the lateral portion of the hypothalamus, preoptic region and in the frontal and limbic cortex. This activity begins a few seconds after the stimulus and continues for several minutes. In animals with a sexual cycle, similar changes of electrical potential occur preceding ovulation. This modification in the lateral preoptic region appears to be related to sexual activity since it could only be recorded during spontaneous or induced estrus. Ascending reticular fibers from the brain stem appear to excite neuroendocrine hypothalamic mechanisms. Ovulation may be blocked by a variety of drugs which appear to impair excitability of the reticular system. Both cholinergic and adrenergic blocking agents prevent ovulation. The cholinergic components act earlier and perhaps involve the afferent pathways from the vagina. The adrenergic component probably represents the final hypothalamic link with the hypophysis.

Green, *et al.*(3) have observed the de-

velopment of hypersexuality after lesions of the pyriform cortex beneath the basal amygdaloid nuclei in the old cortex. This appeared not so much an actual exaggeration of sexual behavior as a loss of the animal's capacity to distinguish its special territory from the ordinary environment and to adapt its behavior accordingly. There seems to be no evidence that the hypersexuality induced by lesions in the pyriform cortex has anything to do with endocrine mechanisms. These observations perhaps open the problem of territoriality to experimental study. This is a subject of special importance in human relationships.

Before leaving the hypothalamic area its relation to appetite may be mentioned(2). This appears to be a food intake mechanism in the lateral ventral hypothalamic region. After injury to this area extremely hungry animals refuse to eat when presented with food. After injury to a closely related system a satiated animal still makes chewing movements and takes food into the mouth over and over again. Medial lesions in the hypothalamus make the animal eat when he is not hungry and lateral lesions make the animal refuse to eat when he is hungry. In both cases the animal is more prone to be guided by taste than any drive to eat. It is impossible at present to relate the problem of anorexia nervosa to these findings.

Psychiatrists may be interested in basic physiologic concepts concerning the nature of inhibition in the nervous system. It appears that certain neurons with short axons, internuncial cells or type II cells of Golgi, have an inhibitory function and give off a special chemical mediator at their terminal synapses which is inhibitory. This causes a hyperpolarization of the neuronal membrane which is the reverse from that associated with excitatory reaction or depolarization. This theory was first glimpsed by intracellular recording from spinal motor neurons. Renshaw(1) found that a two neuron reflex arc was inhibited by stimulation of the ventral root. He proposed that this was due to antidromic stimuli evoking a discharge of the interneurons. Eccles(1) called the specialized cells mediating the inhibitory influence Renshaw cells. There is a belief that an identical chemical transmitter is liberated at all the functional terminals of

a single neuron. Thus the synaptic transmitter from motor axon collaterals to activate Renshaw cells is the same transmitter which activates muscle cells at their peripheral terminals, namely acetylcholine. The insertion of an intermediate neuron in the circuit is a device to change the chemical mediator acting on the next or the inhibited cell.

Chemistry may be represented in this review by a consideration of the nature of the inhibitory transmitter. Florey and McLennan(1) found a Factor I which caused inhibition of the stretch reflex. It is not the same as acetylcholine or the postulated sensory transmitter. Factor I remains in solution after treatment which precipitates histamine, noradrenaline and adrenalin. Strychnine formerly considered as a convulsive drug blocks Factor I and wipes out the inhibitory action of the Renshaw cells. Investigators are now working with gamma-amino-butyric acid (GABA), which is found in brain extracts and forms part of the inhibitory factor. The action of GABA exhibits many qualities of nerve cell inhibition. The use of GABA applied topically to the surface of the nervous system has demonstrated the absence of inhibitory neurons in the cerebellar cortex. It has also been proposed that there is an absence of Renshaw cells relaying the inhibitory transmitter in the hippocampus. This would tend to explain the low threshold of the hippocampus for seizure activity. An outstanding feature of GABA is its predelection for dendritic synapses.

Changes in electrical potential recorded in brain wave tracings has become an important indicator of conditioned reflex activity and permits evaluation of events not only in cortical but also in subcortical structures. Yoshi(1) found that the conditioned response appears first in subcortical structures, particularly the midbrain reticular formation, and is much larger and longer lasting there. In early stages the conditioned response is diffuse but later the thalamic reticular system filters out widespread impulses so that they reach only the localized cortex where the effect of the unconditioned stimulus occurs. Morrell and Jasper(1) used visual stimulation as an unconditioned stimulus in forming temporary conditioning. The light was repeatedly preceded by an

auditory or tactile stimulus to which the animal had previously become adapted and did not respond. A generalized potential change in the cortex upon auditory or tactile stimulation provided first evidence of conditioning. When the reflex was further developed the auditory or tactile stimulus provoked only local activation of the visual cortex.

Worden(2) found that potential changes in the electroencephalogram could be elicited at all levels of the acoustic pathway in response to conditioning. He planted multiple bipolar electrodes chronically along the auditory pathway in the cochlear nucleus, trapezoid nucleus, inferior colliculus, medial geniculate, auditory cortex and reticular formation. Since the animals were still alive the position of the electrodes had not been verified. Using a constant tone of several seconds duration as a signal the animals were taught to press a lever to obtain food. The cats were also trained to a negative auditory stimulus which meant that the pedal would not deliver food. The cats showed signs of learning on the third day of trials and potential changes were noted in certain leads following the auditory signal. On the sixth day of training to the positive stimulus large potential changes were present in all leads. There were correlations between the evoked potential changes in the different leads and the individual behavioral events so that the responses from different leads varied from time to time. Extinction of the conditioned reflex increased the amplitude of evoked responses both to the positive and negative stimuli. During learning the positive stimulus evoked a larger response than the negative, whereas, in extinction the negative was greater than the positive. Galambos(2), in commenting upon this work, pointed out that this study demonstrates clearly that brain changes in conditioning are by no means limited to neocortical structures.

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ELECTROENCEPHALOGRAPHY

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Recently papers on EEG and conditioning have trickled into the neurophysiological literature in increasing numbers. In the past two years there has been a "paper explosion" in this field. International symposia with large East and West participation were held in the U.S.A., France and U.S.S.R. Countless papers and reviews were prepared (24, 38). This limited review will have to be once more constricted in its scope, covering, this year, conditioning and EEG. One important contribution confirming previous findings (18) in a more controlled experiment should, however, be noted (44). Intravenous pentothal was administered to carefully selected patients with either schizophrenia or depression. The resulting increase of EEG activity, particularly in its fast range, was significantly higher in schizophrenics. Whether depressed individuals are characterized by a decreased drug-induced electrogenesis when compared with normals or the schizophrenics have a true increase of the electrophysiological output is still to be investigated. Previous studies suggest that the latter is correct (18).

CONDITIONING AND EEG

1. Generalization and Concentration: Early studies suggested that a generalized cortical desynchronization is seen at the onset of conditioning. This desynchronization is later "concentrated" in the region related to unconditional stimuli (UCS): occipital area in conditioned alpha-blocking; contralateral motor cortex in leg withdrawal reflexes. Diffuse evoked potentials and desynchronization could be induced by conditional stimuli (CS) in many structures (generalization). Certain cortical areas are more suited for associating stimuli than others. Secondary potentials evoked by flicker were recorded in cats in the sensorimotor, primary visual and associative areas, but not in the primary auditory cortex (15). The motor cortex shows secondary potentials evoked by all sensory modalities and,

therefore, represents an "associative cortex" par excellence. In man, pairing a conditional stimulus (CS) with fist clenching elicits a conditioned local depression of the "wicket rhythm" in the contralateral central region. This is preceded by a phase of generalized desynchronized response (15). Desynchronization and evoked potentials were found at the beginning of learning in the hypothalamus (26, 37), thalamus (41, 49), and reticular formation (21, 49). Regular rhythmic activity could be observed in the medial thalamus and slow rhythm in the n. centralis lateralis (43). In the dorsal hippocampus, 6 c/second activity is generally found at that stage (2, 20, 21, 49). However, approach behavior is more prone to be associated with such activity than other behavior manifestations (searching head movements) (2). Such hippocampal activity may reflect reticular formation activation (20, 21). When CR's are established, desynchronization may persist in the cortex and hypothalamus where it may shift in time toward the onset of the CS (34). Slow waves may appear instead (17, 27, 28, 42, 49). Certain thalamic nuclei (VA) may become involved in CR's, and 4 c/second activity appears (47, 49). The same is observed in the reticular formation: slow activity may appear at this stage; evoked potentials may be suppressed here (particularly in avoidance) or increased (in approach) (24, 49). Hippocampus may also show a variety of responses. The negative stimuli during differentiation may elicit either desynchronization or slow activity, or regular slow rhythm.

While during the initial phases of conditioning, the effects are wide-spread and relatively constant, during the second phase of conditioning, less constant phenomena are observed. In one study (4) using cats, no local response was found in conditioned arousal by a tone paired with electric shock to the leg; electrical responses decreased by repeating CR's. The lack of a constant relationship between the EEG arousal and CR's is not surprising since cortical desyn-

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chronization does not always signify an excitability increase(30). In defensive CR's, despite diffuse cortical desynchronization, thresholds established by electrical stimulation decrease only in the contralateral motor cortex. Also, two desynchronizing systems were suggested for the reticular formation (3); one related to food-getting and the other to defensive reflexes, corresponding to approach-avoidance dichotomy. Chlorpromazine affecting only defensive system, permits dissociation of these effects. Also, when one finds a hypothalamic "point" facilitating food-getting behavior, its stimulation automatically inhibits defensive reflexes(19, 20).

EEG changes differentially found in a variety of cortical and subcortical areas during different phases of conditioning suggest that "closures" of temporary connections may occur in the subcortex, rather than the cortex(15). The following additional procedures have been used :

A. Frequency-Specific EEG Changes : When a rhythmic stimulus (flicker) is used as CS or UCS, driven responses in the EEG are facilitated and often new "injected" frequencies may be revealed in the tracings between conditioning trials. Recording these "labeled"(24, 25, 26) frequencies facilitates the study of the destiny of a CS in the cerebrum. All workers agree that the appearance of these new EEG frequencies are associated with early conditioning and that they tend to disappear at a later date. However, for some, there is a final disappearance of these rhythms when the conditioning is well-established(31); for others, they concentrate in a few critical structures, at least in the approach behavior (not in avoidance)(24). Thus, a 3 to 4 c/second flicker paired with electrically induced leg withdrawal, elicits driven responses in both visual and contralateral sensorimotor cortex (35). "Labeled" rhythms were found in the cortex, reticular formation, and hippocampus during initial phases of food and avoidance conditioning but they shifted to the visual system and the n. ventralis anterior when conditioned behavior was well established (24, 25, 26). In another study, during conditioned avoidance behavior, both "driven" and "injected" resting rhythms were found in the cortex and hippocampus, but they disappeared when the conditioning was

well established(31). They may reappear when CS's are not reinforced(35) (see also 46, 50). They seem to be facilitated by processes of differentiation(10, 29). It seems, therefore, that these rhythms are used by the CNS for stimulus-identification, particularly during stressful situations(31). It is not certain whether they are required to carry out a well established CR.

B. Laminar Studies and Microelectrography : During initial stages of training, single cell activity to visual CS is induced in visual cortex, hippocampus, and reticular formation(37). According to another study, however, the formation of the motor CR is always associated with a decrease of unit activity in the motor area(23). When the reflex is well established, activity predominates in layer 4 (receptor) of the CS region and in layer 5 (effector) of the motor cortex(39, 40). A beautiful analysis of the phase reversals in the dorsal hippocampus during training was described(2).

C. Cerebral Stimulation : Attempts to study conditioning by direct stimulation of the cerebrum are increasingly successful. Stimulation of cortical areas was paired with leg withdrawal and this made a successful CR(12). This study showed an easy transfer of conditioning to the sensory stimuli of a modality corresponding to the cortical region stimulated, or to the cortex of the opposite hemisphere. The latter can be observed after sectioning the corpus callosum. Sectioning cortex around the stimulated areas does not prevent the appearance of CR, but undercutting this region, does. This suggests that the temporary pathways are centrifugal. Although the initially stimulated region may be ablated, the CR persists. These studies were extended to cerebral stimulations for both CR and UCR. Thus, the latter can be realized by stimulating the motor cortex(14).

In a satiated animal, a food CR could be established only when corresponding points in the hypothalamus were stimulated(45). After repeatedly pairing a CS for food-getting (3 c/second flicker) and hippocampal stimulation at the same frequency, the latter applied alone induces the food CR. This CR may be partially differentiated from the electrical stimulation applied to the opposite hippocampus(31).

2. *Participation of Subcortex in the Genesis of Conditioning*: These general findings show that subcortical regions may participate in the formation of CR's. On the basis of analogous data and in view of the convergence of many sensory modalities upon the neurons of the non-specific systems of the mesencephalon, diencephalon and rhinencephalon a theory was proposed that the "closure" of the temporary connections takes place in these regions preferentially (15). One related argument(5, 6) is that since many CR's are associated with emotional components, it is reasonable to assume that additional closures will be established in the limbic system and hypothalamus, the main closures remaining in the cortex. Direct experimentation in this field was developed using electrophysiological procedures in addition to ablations. The results of the latter were both confusing and illuminating. Practically any higher cerebral system could be eliminated in several stages without irrevocably suppressing the ability of the animal to form temporary connections of some sort. Massive bilateral lesions in the reticular formation do not suppress EEG arousal(1, 11) visual pattern discriminations and avoidance reactions. When intracerebral reflexes are formed by using stimulations of reticular formation as UCS, the ablation of the stimulated region does not suppress CR (41). Transcallosal connections are not indispensable for generalization(12). Bilateral hippocampal lesions do not block avoidance behavior in cats(20, 22), although they impair auditory CR. However, lesions of centre median may impair CR's (13, 48). Ablation of the posterior hypothalamus does not(13).

Electrophysiologically, attempts were made to produce temporary physiological dysfunction in various regions by either setting a spreading depression(7, 8, 9), or convulsive discharges(16, 20, 32, 33, 36). Hippocampal seizure discharges temporarily suppress CR's(16, 20). However, CR's may be formed in cats despite training carried out during hippocampal discharges. Fixation could be established in rats despite the hippocampal discharge preceding the training by a few minutes(32). However, if this interval was reduced to less than five min-

utes, fixation could not be formed after generalized convulsive discharges. The usual behavior could not be elicited in fixated rats following either generalized or hippocampal seizure discharges at the beginning of the series of trials. However, resistance to the disturbing effects builds up during the consecutive trials insofar as approach behavior is concerned and not in avoidance(32). All in all, it becomes obvious that during early conditioning, widespread connections are formed in a parallel fashion and it seems that the original diffuse desynchronization and generalization of evoked responses somehow participate in this process.

3. *Circuits for Learning*: As a basis for new experiments, hypothetical circuits for conditioning learning have been proposed. Attention was once more drawn to the extraordinary possibilities of a neural reticulum to converge a mass of information to single neurons(15). The proposed diagrams, however, do not contain specific components, which will make a non-reinforced CS to become a conditional inhibitor, a requirement which any diagram of this sort should satisfy. However, the French physiologists do recognize the possibilities of including such connections in their diagrams which is reticular-formation-centered. From Georgia, U.S.S.R. comes the most elaborate attempt to date to propose a blueprint for conditioning, but it is cortex-centered(5, 6). Briefly, an activity of high order is ascribed to stellate cells capable of sustained self-reactivation because of the considerably developed perineural reticulum. Inhibition would be effected through electrotonic activity of apical (generalized inhibition) and basal (limiting focal excitatory processes) dendrites. Reverse connections play a dominant part in this theoretical construction.

The same monograph contains remarkable experimental studies showing the importance of the space factor in conditioning. We believe that space and time factors should be given more consideration for the understanding of conditioning. Experimental analysis shows that potentials evoked by either regularly repeated flashes or intracerebral (hippocampal) stimuli are progressively modified as to their temporal course, seemingly adapting themselves to

the frequency of stimulation(31). It is this kind of basic EEG studies which seem to hold great promise for the future understanding of brain mechanisms permitting an animal to anticipate an event within a certain modality system at a certain time and at a certain place.

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CLINICAL PSYCHOLOGY

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More books are published every year concerned with the status and implications of psychoanalysis. Each of them in its own way expands upon the significance of that subject for the modern world. It sometimes looks as if Jones's impressive biography (17) had given the signal for a continuous evaluation of what psychoanalysis is, *sub specie aeternitatis*, or at the very least what it has contributed to civilization. If the cue for the accession to universal fame is seen in the volume of publicity, and especially in an ever-extending effort to relate the new protagonist to every conceivable facet of culture, then psychoanalysis has at long last arrived. The books of which I am speaking must be clearly distinguished from reports about the advances of psychoanalysis as part and as a system of psychology. The contributions here to be reported on are by nature theoretical and tend to be interdisciplinary in orientation. The emphasis is, however, not on the theory itself—at any rate, not on the theory alone—but on its application to a much more general purview (9, 14, 21, 25, 34). The new genre which so vigorously multiplied in the last few years has its risks and problems; but it also serves a function that may justify its frequent vagaries and pitfalls. All great interpretations of the human condition contain and conceal more than their authors could have been aware. In fact, the enduring greatness of scientific as well as of literary works can well be assessed by the scope of what is at first latent in them, but soon begins to show its stimulating and germinating power every-

where. Any monumental new insight like psychoanalysis is bound to affect the intellectual orientation of man far beyond its original scope. When Freud likened his work to that of Copernicus and Darwin he was no more than realistic, and simply foretold the task ahead of the next generation of Western intellect. The liabilities of those who respond to the challenge are as obvious as they are, historically speaking, inevitable. The ones who examine psychoanalysis with adaptation to new purposes in mind are as prone to compound identification with appropriation as were those who examined evolutionary theory a century ago. In the process, the borderline that divides exploration from exploitation gets so blurred that it can usually be redrawn only after it has been re-surveyed by a later and more detached generation.

The recent trend in the adaptation of psychoanalysis to broad cultural perspectives was ushered in by Marcuse (21) whose point of departure is Freud's cultural pessimism. Marcuse's point of reference is an economic interpretation of social development which he ultimately holds responsible for the evils of conflict and repression. Brown (5), a cultural historian, has more recently moved in the same direction. He is concerned with Freud's ideas on the life- and death-instincts (Eros and Thanatos) and on sublimation, and follows up their workings in history through an examination not so much of history itself but of the interpretation of history and life by various great men. Civilization is viewed as a sequence of deepening repression, and

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Brown's exhortative concern is with the lifting of it. Rieff (29) stays with the present. His attempt is to cull from Freud's discoveries the outline of a new morality. Riesman (30) through a brilliant content analysis of Freud's work already pointed several years ago to the values and sentiments inherent in it. Nelson's collection (24) contains a great diversity of testimonials as to Freud's significance for the century, and shows clearly that psychoanalysis has long transcended its place in psychology and psychiatry. A survey of this expansion is also the subject of a series of seven essays contributed by British psychoanalysts and edited by Sutherland (34). The participants in a very extensive symposium edited by Sydney Hook (14) examined the scientific status of psychoanalysis, and in the course of it produced one of the most interesting and intellectually exciting books in this field. The scientific status of psychoanalysis is habitually belabored by critics who prefer to express their distaste of it in this manner, yet wish to protect their objectivity by ignoring those aspects of psychoanalysis which do not fit their preconceptions. Nevertheless, the unique status of psychoanalytic concepts and the logic peculiar to them poses a problem of vital relevance when it is approached in a realistic and informed frame of mind. A similar symposium edited by Bellak (3) addresses itself to this purpose by examining the concepts of libido theory, of the Unconscious and of psychic structure.

Two outstanding issues of a new psychological monograph series pertain to psychoanalytic theory: Erikson's (10) brings together several important papers of his on identity and the ego, published before. Rapaport (26) offers a terse discourse on the structure of psychoanalytic theory with brief but incisive discussion of its critical problems. The complex tasks of learning and of teaching psychotherapy are at long last treated in a systematic discussion by Ekstein and Wallerstein (9). Fraiberg's book (11) on the psychological understanding of early childhood, among the best available on this subject, should appeal to the professional and non-professional reader alike.

The study of the sociological determi-

nants of mental illness, begun by Hollinshead and Redlich, is continued into an examination of family and class by Myers and Roberts (23). The mental hospital as a small society, and the effect of its covert emotional structure on the patient is the subject of a monograph by Caudill (7). The methodology of research on the effects of various kinds of treatment is dealt with in a procedure-oriented quasi-textbook form by Reznikoff and Toomey (28), and from a multiple point of view, both descriptively and systematically, by Chance (8). Jahoda's book (15) on what is, and on what should be called, *mental health* provides an exemplary discussion of questions which are very far from being merely theoretical or semantic.

Holt and Luborsky's two volumes (13) report on the criteria for the selection of psychiatric residents and on the theoretical and methodological problems of defining them. Their books present one of the best achievements in recent psychological assessment (that is, the diagnostic study and evaluation of personality traits and abilities). Among books on diagnostic tests, two volumes on the Rorschach Test should be mentioned: on adolescents by Ames, Metraux and Walker (1), and on elementary school children by Ledwith (18). There is a new book out on the Szondi Test, by Szondi, Moser and Webb (35). Porteus has written a new book on his Maze Test (25) which should be much more widely used, broadly applied and studied than it is at present. A series of interesting new tests aiming at the measurement of social adjustment together with that of intelligence are described by Leiter (19). For a more comprehensive view of clinical psychology two books should be consulted: Brower and Abt's third volume of *Progress in Clinical Psychology* (4), including among others an intensive discussion of the state of diagnostic testing by seven experts; and Beck and Molish's reader (2), a collection of papers in clinical psychology of great historical and topical breadth.

Among the ever increasing number of new books in the social sciences, the following may be of interest for the psychiatric reader: a highly original sociological approach to the problem of identity, its trans-

formation, continuity and change, by Strauss(33); a systematic introduction into sociology, outstanding by its clarity, by Johnson(16); a comprehensive book on the social psychology of groups by Thibaut and Kelley(36); and a very useful compilation of research methods in social relations by Selltitz, Jahoda, Deutsch and Cook(32). On the subject of communication two titles present themselves: one more specifically oriented toward psychopathology, stressing experimental studies on a variety of levels, by Hoch and Zubin(12); and a more discursive one oriented toward ideas originating from a variety of fields, by Carpenter and McLuhan(6). Mandler and Kessen(20) deal instructively with the logical and epistemological qualities of psychological concepts. Rapoport presents a mathematical method for conceptualizing human conflict based on Game and Decision Theory(27); Roe and Simpson a collection of papers on the evolutionary origins of human behavior(31); and, finally, Murray(22), a series of papers organized around the theme that myth is not only an historical form but a perpetual aspect of experience, and thereby an elementary determinant of human conduct.

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CLINICAL PSYCHIATRY AND PSYCHOTHERAPY

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It is obviously impossible in the space at our disposal to include all of the research and clinical contributions of importance that have been published during the past year. It is, therefore, our task to select rather arbitrarily a limited number of those that have come to our attention, at the same time, attempting to present items with some spread over the clinical area assigned to us.

As should be expected, schizophrenia because of its position in the frequency of mental disorders, remains of prime interest in clinical psychiatry. Chapman, *et al.*(1) submit a very comprehensive thesis dealing with human ecology of disease, impaired organ functions and tissue damage. It presents a theory of adaptive reactions in general, and those in the schizophrenic process in particular, and Searles(2) devotes an excellent essay on the dynamics of integration and differentiation in schizophrenia; a theoretical exposition of phenomena which in clinical practice are closely interwoven.

A discussion of a central dynamism in chronic schizophrenia is discussed by Van Dusen(3) with emphasis on the clinical

phenomenology with case examples. He points out that a thorough phenomenological exploration becomes effective psychotherapy with the chronic type of patient whose symptoms are stereotyped. The semantics and context of the schizophrenic's language is discussed by Ferreira(4) a difficult subject which he attempts to clarify and to establish a theoretical basis for the bizarreness of the language used by schizophrenics, and Lewis and coworkers(5) made a preliminary study of abstraction ability and orality in schizophrenics utilizing 30 patients and 30 matched controls utilizing a proverbs test. These studies confirmed the relative inability of the patients to abstract such material, particularly in abstracting oral as compared to anal and phallic proverbs. No such differences were noted in the control subjects.

Johnson(6) reported his investigation of the moral judgment of schizophrenics. Forty-five patients and 15 controls were studied by Baruk's Tsedek Test of Moral Judgment as a basic procedure. The judgments made by schizophrenics differed from the non-schizophrenics in social thinking. It was one of deviancy reflecting tendencies toward social detachment, and egocentric concerns while normals made humanitarian judgments pre-

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dominantly. Beck(7) in an interesting study with theoretical components presents in some detail the phenomenon of affect autonomy in schizophrenic patients, and Ehrental and Jenney(8) investigated the time sense in schizophrenics. They discuss the various conceptions of time and found this sense disturbed in a number of patients. Some gave their ages to be those they were at the beginning of their illness. Modell(9) made a systematic study of schizophrenic patients with auditory hallucinations. Tape recordings were made of the subject's descriptions over a long period of time, and it was possible to draw some pertinent generalizations regarding the mechanisms involved.

In a study of homosexuality and paranoid schizophrenia Klaf and Davis(10) made a survey of 150 patients and an equal number of non-psychotic controls. The findings are discussed in relation to Freud's hypothesis concerning the development of paranoid symptoms. They conclude that additional thorough scientific studies will have to be made for the verification of the theory that paranoid mental symptoms develop as a defense against emerging homosexual trends. Utilizing human figure drawings by 18 schizophrenic and 18 normal adults Machover and Liebert(11) made an extensive study of these two groups of subjects. Drawings were produced with and without L.S.D. administration revealing a variety of differences which are described and analyzed. An interesting investigation, attempting to detect factors having prognostic significance in both acute and chronic forms of schizophrenia, was reported by Walker and Kelley(12) the types of symptoms, various social and other environmental factors were considered, as well as the length of, and type of therapy afforded. It is of some interest to note that they found the Hooper Visual Organization Test (V.O.T.) a failure as to its prognostic value with both the acute and chronic types. Salzman(13) reviews some of the pertinent studies that have been made on the dynamics of paranoia and paranoid states illustrated by case material pointing up the theoretical and therapeutic aspects of the condition. Three cases of Ganser syndrome are described by May and co-workers(14) in connection

with a constricting but protective life situation which is preferred by the subject to the hazards of freedom. Acute symptoms were precipitated by the threat of expulsion from the first type of environment into the second. This Ganser reaction is therefore released by a situation which is the reverse of other reported cases.

Bartemeier(15) presents cases to show the predominating symptoms of borderline disorders where anxiety may have served to prevent further development of the psychosis. The patients were considered borderline as they had neither hallucinations nor delusions and were not legally committable. Forrer(16) discusses instances and presents cases of hallucinatory experiences in non-psychotic persons, emphasizing that benign hallucinations are not infrequent in those hospitalized for medical or surgical reasons. A review of the concepts in the literature and a discussion of the factors involved in serious suicidal intent with case illustrations of the common features characteristic of these patients, which appear to constitute a special syndrome, has been published by Stone(17), also a review of the literature and a study of cases of adolescent and young adult self mutilation incidents in a general psychiatric hospital was made by Offer and Barglow(18). These self attacks occurred in severe character disorders, in schizophrenia and in borderline states. They are interpreted as "suicidal gestures" rather than genuine attempts. The incidents have a contagious quality through imitation and identification.

Among the accounts of perversions is the informative description of the mechanisms of aggression and forbiddenness in creating voyeurism published by Yalom(19) with case histories and psychodynamic comments. Wahl(20) has reported the psychodynamics of two cases of consummated maternal incest. While father-daughter incest is not rare, mother-son incest is either exceedingly rare, or at any rate is rarely reported; therefore, these two cases are of particular interest psychologically. Regarding family neuroses, Erenwald(21) reports 4 case histories including one family pedigree covering 4 generations. The study focuses on the potentially communicable nature of disturbed interpersonal attitudes.

Norris(22) discusses the possible prenatal factors in intellectual and emotional development. Several of these are pointed out, but it is emphasized that investigations on prenatal influences are still new and speculative. If they are eventually confirmed they will serve as a "first line of defence against mental illness." There are obviously some psychophysiological influences that exert emotional and physical stress on the prenatal organism. Hoffman(23) attempts a philosophic analysis of attitudes toward psychiatry, nature, and science, to clarify the meaning of concepts and the terms used to express them. He points out that the terms used in labeling personalities cannot be defined scientifically and that their use often confuses the issues. Llopis(24) of the Psychiatric Clinic of the Provincial Hospital of Madrid has presented an essay describing in detail his unique "Concept of an Axial Syndrome Common to all Psychoses." It is based on a great deal of experience.

PSYCHOTHERAPY

A comprehensive overall review by Appel(25) states that physicians and surgeons will be called upon in the future to do more psychotherapy than in the past or present. He outlines the various types of psychotherapy that can be applied by the general practitioner. He presents an illustrative case history. Lichtenberg and associates(26) offer an analysis of various types of therapy in terms of their utility in practice and clinical settings. It is a classification of therapeutic procedures and techniques according to degrees of mutual-achievement strivings as related to type and severity of the mental disorder. Whitehorn and Betz(27) report a continuation of their pioneering studies of the physician-patient relationship in therapy, showing how the therapist is a crucial variable in the results of treatment with schizophrenics and neurotics. These unique studies have a fruitful predictive value. Bellak(28) deals with the treatment of schizophrenia and psychoanalytic theory with their interactions. It involves mainly the situation of ego strength and ego functioning. Any treatment must act toward the improvement of these. Schizophrenia is interpreted as global disturbance of the ego function, of a severe nature. Ansell(29) in

an essay reviews the ideas and ideologies in psychotherapy, indicating the directions in which therapeutic attitudes are moving, particularly in psychoanalysis, and Lehrman(30) has examined critically the lack of precision in psychoanalytic procedures reviewing a number of published opinions by various authorities, from which he concludes that scientific precision has often been consciously excluded from classical psychoanalysis, that it has several aspects of religion and has tendencies to "defensive secrecy and arrogant elitism." Novy(31) analyzes religion in relation to psychoanalysis and other psychotherapies pointing out the issues and the complications of the relationship.

Important experiments in hypnosis reported by Kaplan(32) showed that it does not completely remove the perception of pain. It is only displaced or repressed by an artificially induced dissociative state. The subject feels physical pain but does not consciously realize it. It is concluded that chemical agents acting at the neurophysiological level are more appropriate to use, when possible, than hypnosis. Meldman(33) reports a case of personality decompensation after hypnotic symptom suppression. In his opinion, while hypnosis is effective for symptom removal, it is contraindicated when the symptom is related to an obsessive-compulsive syndrome or to a serious personality character defect or to a defective ego. Careful histories must be taken and a diagnosis made to determine the type of therapy to be applied.

Doshay(34) advocates psychotherapy as an adjunct in the treatment of paralysis agitans. Regardless of the type of drug and physical measures required, psychotherapy is needed to integrate the therapy. It is important in this long term disorder to gain and maintain the confidence and cooperation of these subjects and to support them psychologically. Strupp(35) has published an excellent discussion of the nature of the psychotherapist's contribution to a treatment process.

Group psychotherapy is very active in many centers over the United States and is definitely on the increase, and there are some interesting publications. Berne(36) discusses psychoanalytic versus "dynamic"

group therapy. He points out that the evidence in the literature is insufficient to justify applying the term "psychoanalysis" or its cognates to group therapy, but that "dynamic group therapy" should be appropriate and enough. Straight(37) made a follow-up study of 24 hospitalized patients—14 of whom had received group therapy and 10 utilized as controls. Evaluation was made of the level of social functioning. The evidence for better adjustment was in favor of the group treated patients. Finally, Bennis(38) presents a critical review of group therapy research emphasizing and analyzing the difficulties and the realistic and emotional reasons for the lack of collaboration in research in this field.

Among the informative books of the year bearing on the topic of this section are :

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PHYSIOLOGICAL TREATMENT

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With over a thousand pertinent papers this past year, and a flood of new products from the companies, it has been harder than ever to do justice to the task of an annual review. A new international journal, *Psychopharmacologia*, has set a high standard in its first issues. Several useful reviews in the field of psychopharmacology are listed in our bibliography(1-7). Reference should be made to some thoughtful discussions of the management of depressions(8-10), and to the large scale pooled data on drug treatments from the VA hospitals(11).

WHICH DRUGS TO USE ?

In spite of the endless chain of patentable phenothiazine derivatives and variants brought into the market, Hurst(7) does not believe that any of these can usefully replace chlorpromazine, and suggests that in those rare cases where jaundice or agranulocytosis has occurred, fluopromazine could be substituted. The combined experience of 37 VA hospitals also tends to establish the value of chlorpromazine(11). For the management of depressions, imipramine (Tofranil) has won wide support(12-15) and phenelzine (Nardil) approaches it in efficacy(16-18). Together they appear to have practically superseded iproniazid (Marsilid), whose toxicity has proved disturbing (19-20), and drastically reduced the use of EST, which in spite of its crudity still is a quick and sure method for the relief of depressions.

Our use of the newer drugs is still mostly empirical; data from small groups of patients with or without double-blind experimental design are reported with monotonous frequency, while careful first-hand clinical observation is being neglected. Astrup(21) attempts a rational analysis of drug action by reflexologic studies, and concludes that the present range of efficacy of anti-schizophrenic drugs is mainly in the broad category of sedation of subcortical ac-

tivity. "The greater the general impairment of nervous activity, and the more pronounced the dissociative phenomena are, the poorer are the therapeutic effects of ataraxic drugs." Deniker(22) believes that the extreme end product of a drug's action can help us understand its value. Thus chlorpromazine or levomepromazine tend to induce akinesia and bradykinesia, while phenothiazine sulfamide or prochlorperazine induce psychomotor excitement. For this reason the former are used to relieve excitement or hallucinations, while the latter are indicated for withdrawn and passive patients. For perhaps similar reasons Tofranil, an excitant agent, has also been found useful in the management of withdrawn schizophrenic patients(23).

TOXICITY OF PSYCHOPHARMACA

Aside from the relief of target symptoms, toxicity, though minimized by some drug sponsors, remains a basic concern in the selection of new drugs. It should also be remembered that long-term data on chronic toxicity accumulate slowly. In a series of 29 patients treated with Marsilid, Pare(24) found abnormally high serum glutamic-oxaloacetic transaminase values in 9 cases, which returned to normal after the drug was withdrawn. Similar changes, in a smaller number of cases, have been reported with Nardil(25). Though Rees and Benaim(19) concede the value of Marsilid in depression, a full consideration of its toxicity leads them to conclude its use is no longer justified. The phenothiazine agranulocytosis rate has been estimated at about 1:700, though mild leukopenic reactions are quite common(26). Denzel(27) reports that in 14 out of 50 cases treated with ataractic drugs, spinal fluid protein values above 45 mg. were found, while 11 cases showed abnormal gold curves. Sobel(28) reports, or has reason to suspect, fetal damage when pregnant mothers are treated with insulin shock or reserpine, while chlorpromazine can cause respiratory distress in the newborn and may increase the incidence of both

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antepartum bleeding and prematurity. Roux (29) has induced a very high incidence of fetal death or malformation in mice and rats after prochlorperazine administration. Though its significance can be questioned, abnormal cephalin flocculation tests have been found in 5% of the patients treated with trifluoperazine (30), and have also been found in treatment with chlorpromazine, perphenazine and phenelzine (31).

From another point of view the drowsiness, hypotension, motility changes and even the euphoria induced by some drugs can create legal problems involving traffic offenses (32), for example, especially since chlorpromazine mixes poorly with alcohol (33). Children appear to be especially susceptible to marked motor side-effects from tranquilizers (34-36), and a peculiar susceptibility to heat-stroke among adolescents under chlorpromazine is described (37). In an older population an increased tendency to both injury and illness has been reported (38). In addition to the complications and side-effects mentioned in previous reviews, hairy tongue is encountered in patients on chlorpromazine and mepazine (39). Harnkoff and Heller report memory difficulties in the course of otherwise successful treatment with MAO inhibitors (40). Ciezlak (41) enumerates the extraordinarily varied and occasionally dangerous complications encountered in reserpine treatment; Habel (42) declares that the dangers of its chronic use are still unknown, though 15,000,000 tablets a month are being dispensed in Germany.

KEFAUVER AND THE DRUG PROBLEM

The investigatory activity of Senator Kefauver's committee has pointed up some practices and abuses in the drug industry that are of interest to psychiatrists (43). Intense competition among companies leads not only to valuable discoveries of new products, but also to a confusing and superfluous variety of drugs, which in turn entails an enormous promotional activity that is bound to exaggerate the positive and minimize the negative features of a product. This promotional activity has reached the point where the industry expends \$5000 per doctor per year on the effort, with the burden of expense borne by the public. Thus it

is that one company wholesales reserpine at \$39.50 per 1000 tablets under its trade name, but sells the identical product under its generic name to the government for 60 cents per 1000. The Food and Drug Administration is inadequately staffed and budgeted to maintain necessary safeguards and surveillance, but the busy practitioner is, on the other hand, seldom in a position to sift the details of evidence, often contradictory, to allow him to appraise the drugs. The following brief notes on some drugs are mere suggestions of what the literature contains.

NEW DRUGS

The unique taming effect of chlordiazepoxide on vicious agitated monkeys, dingo dogs and wild animals, stimulated the clinical trials that produced Librium (44-46), which markedly reduces the tension, anxiety and agitation of neurotics, and is said to be very effective in chronic schizophrenia. The side-effects of drowsiness, fatigue and ataxia are infrequent, mild and reversible (47). Two other new sedative drugs related to the phenothiazines are thioxanthene (Taractan) a broad spectrum drug with marked hypotensive action (48-51), and fluphenazine (Prolixin), a trifluoromethyl homologue of perphenazine, possessing extraordinary potency (52, 53).

Some 40 other new products are described in the literature, but usually with little claim to attention. Some are non-toxic and ineffective, others are too toxic, and still others are without unique properties to recommend them. To mention only a few: chlorprothixine (54) acts like a phenothiazine, but is said to be non-toxic; L.I.S813 (Clarmil in France) is a phenyl boric acid derivative of no value in psychoses, but with marked sedative effect in neuroses, anxiety and reactive states (55); I.N.-461, benzlindolyethylpyridine, is a non-soporific sedative (56); aminophenylpyridone (57, 58) (Dornwal) and valmethamide (59) (Axiquel) are supposed to relieve anxiety, etc.; phenylpyrrolidinopentane (Katovit in Europe) increases resistance to dysfunction under stress (60); thalidomide is a safe, non-toxic, non-hypnotic sedative (61); cyclopentimine (62) is a well tolerated anti-anxiety, anti-psychosis agent; recent issues

of this *Journal* contain several reports on other new drugs.

Captodiamine (Suvren or Covatin) is described as a non-hypnotic stabilizer that relieves both agitation and depression(63); two new stimulating agents are 5-phenylpseudohydantoin (Tradon), said to be indicated in mild neurasthenic states only (64), and a new analeptic drug, ANP235, sponsored by Delay and his group(65), is supposedly of special value in psychic changes following organic insults. Hypericin is a fluorescent substance derived from *Hypericum perforatum* that is said to induce marked improvement in most mild or moderately depressed patients(66).

Of special interest is a recent report by Bucci and Saunders(67) on the use of procaine, a most interesting drug with a long history, generally well tolerated and with relatively few dangers. Among other enzymatic effects, it is a MAO inhibitor, capable of relieving both depression and schizophrenic symptoms. It is reported to have a most helpful effect on a group of patients resistant to all other current therapies, enhancing vigor, reducing fatigue, and strikingly reducing blood pressure in hypertensive cases.

FAMILIAR DRUGS

Trifluoperazine (Stelazine) can now be regarded as a well established drug, potent in handling many schizophrenic symptoms, useful in allaying anxiety in neurotics, but with distressing and sometimes dangerous side-effects(68-72). Cahan(73) found it of limited value and of considerable toxicity in an elderly female population. Levopromazine (Nozinan in France) is widely used on the Continent in psychoneuroses, agitated and depressed states, and is well tolerated by the aged(74, 75). Promazine (Sparine), actually the oldest of the ataraxics in common use in this country, is useful for rapid sedation in acute psychoses, but can also be quite toxic, especially for the aged; in moderate dosage, however, it is often better tolerated than chlorpromazine(76-79). Another useful alternative to chlorpromazine is prochlorperazine (Compazine), especially effective in manic and acute delirious states(80-82). Perphenazine (Trilafon) is still widely used(83), thiori-

dazine (Mellaril) is highly regarded(84-86), but mectazine (Pacatal) in a double blind study(87) was much inferior to chlorpromazine for schizophrenia (and produced one case of agranulocytosis); in another study(88) with anxiety states it was less useful than a barbiturate, "and costs 10 times as much."

Fluphenazine (Prolixin) is highly potent in relieving hallucinations and delusions in chronic schizophrenia, but at the cost of so many side-effects its value is doubtful(89). With similar material trifluopromazine (Vesprin) produced good results with fewer side-effects(90). Reserpine(91-93) is still found effective in some schizophrenic cases where phenothiazines have failed.

Haloperidol has been most favorably described by workers in several European countries. Delay and his associates(94) regard it as markedly effective in mania and acute delirium, and satisfactory in acute and chronic, especially paranoid, schizophrenia. It is of relatively little value in depression and hebephrenia. Though quite safe, it induces extrapyramidal motor symptoms in most patients, and sometimes sudden and alarming excitement; special caution is required with the aged(95-101).

Interest is still maintained in azacyclonol (Frenquel) for its almost specific anti-hallucinatory effect(100). Lithium(103-105) is highly effective in aborting manic states. Its chief danger, injury to kidney tubules, can be avoided by cautious dosage and a high sodium intake to promote its elimination. The water-soluble steroid hydroxydion (106-108) is a safe and effective agent for brief narcosis or to promote relaxation for psychotherapy.

Among antidepressants Tofrânîl(109-114) holds first place. In spite of the dangers of agranulocytosis, hypomanic reactions, convulsions and confusion, its good results in psychotic depression are comparable to EST (but not quite equal to it); it is of little value in the mild depressions often seen in office practice(115). In resistant cases Lehmann(116) recommends combination with an induced febrile reaction. Nialamide (117) (Niamid) and phenelzine(118) (Nardil), both less toxic than Marsilid, will sometimes work when Tofrânîl has failed, though Nardil can induce liver disturbances,

headaches, insomnia, edema, excitement and hypotension. Isocarboxazid (Marplan) another MAO inhibitor, has also proven to be an active and usually well tolerated antidepressant, though still too new to be adequately rated (119, 120).

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PSYCHOSURGERY

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An improvement rate of 96% in leucotomized patients is more likely to cause raised eyebrows than raised hopes. Nevertheless, the report by Thorpe(16), who has been following his patients assiduously, shows that 87 of 97 survivors of operation were discharged home. Most of the patients were over 50 years of age. These results were obtained by electrocoagulation of the ventro-medial quadrants of the frontal lobes. There were no serious personality defects. The author concludes that on the basis of a 2-7 year follow-up a 95% total improvement rate "may be regarded as the best one could hope to obtain with any neurological procedure in institutional cases."

While no other authors have reported such extraordinary recovery rates, a Canadian group(8), comparing bilateral and bi-medial incisions in matched patients, found in their social evaluation that 80% of non-schizophrenics were out of the hospital. Duration of hospitalization was particularly important, the discharge rate being 75% in those hospitalized less than a year, 55% in the 1-3 year group and 35% in those hospitalized for 4 or more years. Bischoff(4) and Rémy(14) found the major prefrontal operation more effective in schizophrenics.

Lesse(9, 10) speaks of "decompression of anxiety" as a necessary preliminary to progress in therapy of other clinical symp-

toms. This was most graphically demonstrated in patients undergoing lobotomy under local anesthesia. Of 34 patients 29 demonstrated a definite decrease in anxiety during or just minutes following lobotomy. "We found that the clinical psychiatric symptoms (*i.e.*, phobias, hypochondrical reaction, *etc.*) did not begin to fade until the affectual component of anxiety was first significantly ameliorated." McReynolds and Weide(11) assert that the only psychological measure of great predictive importance is concept evaluation in the Rorschach test. This was interpreted as related to the decrease in anxiety following lobotomy.

Barahona Fernandes(2), reviewing the results of Egas Moniz, states: "To act by means of surgery upon diseases purely functional and even psychogenic such as neurosis, was one of the greatest ventures of the Master. It made psychologists shudder and psychotherapists angry. But the fact was there, undeniable, and the future has confirmed it." Referring to excellent results in superior individuals such as a priest, a physician and a university student he admits that there are, in other cases, relapses, further progress of the underlying disease and persistent defects. "Leucotomy may accentuate or quicken the deficit of personality begun by the schizophrenic 'morbus.' It is a fire that extinguishes itself and shows the damage done. The delusions disappear

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but the defect remains, sometimes even more evident. The operation gets the blame for things that belong to the illness . . .

"Leucotomy creates new conditions of accessibility and reaction of the patient (syntonization favoring the vital transference) which should be adequately used for the aimed purpose—diminution of suffering and adaptation to reality."

In a brilliant discussion of "Where Vital Things Happen" Grey Walter(7) shows how emotionally disturbed individuals may respond inappropriately in test situations where simple responses would avoid penalties. He speaks of the "puppet theatre of our laboratory" where a "tragic breakdown" of the mechanism [is manifested by] the total failure of two patients to control by the twitch of a muscle a situation that could be mastered in a few attempts by the humblest experimental animal. Leucotomy corrects this inappropriate response.

Angyán, Huszár and Nyiró(1) studied an obsessive patient by conditioned reflex analysis before and after successful lobotomy. "In place of the typical reflex formation and overwhelming rigid blocking and abstraction in the second signal system there appeared a labile but less differentiating status with concrete formulations." Barber (3) believes that relief of pain by leucotomy is due to the alleviation of worry and concern, a state that can be accomplished in some other patients by opiates, placebos and hypnosis. The common behavioral matrix is a mitigated readiness to respond to stimulation.

The curious compartmentalized attitude toward lobotomy crops up in Brizzi's(5) report. In one paragraph: "All depressive psychotics recovered, while 70% of the control group had to be readmitted." In another

paragraph: "In principle the author does not believe that a cure was ever attained in any of his patients."

Many lobotomized patients deny having been operated upon. Paganini and Zlotlow (13) found that denial was a continuation of the defense mechanism employed by schizophrenics previous to lobotomy.

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CHILD PSYCHIATRY: MENTAL DEFICIENCY 1960

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Addresses, without number, to community groups on mental hygiene must be reckoned as one of the not inconsiderable occupational hazards of the child psychiatrist. Even if we set aside the problems arising from the

cumulative impact of successive nights away from home on our psychic economy (and that of our children), there remain quite fundamental questions as to what we should attempt to teach and as to whether lectures, group discussions, television programs and the like are at all effective in changing the

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behavior we set out to modify. At an Assembly jointly sponsored in 1958 by the APA and the N.A.M.H., whose proceedings have just appeared(1), issues of content and method in mental health education were subjected to a penetrating, sophisticated, and long-needed critique. The monograph makes abundantly clear the urgency of re-examining goals, weighing the evidence for the aphorisms so readily dispensed, and attending to the very real possibility that "education for mental health," if not carefully scrutinized, may have unintended negative consequences. When we urge better care for the mentally ill and public support for the recruitment and training of mental health personnel, we stand on solid ground. Beyond this point (which is to say, beyond our own area of clinical expertness), the footing is at best precarious, even for the angels among us. What constitutes positive mental health, how it should be taught and whether it can be taught at all remain questions of dispute among serious workers in the field. This caveat to the seller is not a call for a moratorium on public education for mental hygiene; it is an appeal for a more searching examination of conventional beliefs and for studies to evaluate the results of educational efforts.

Few of us read Russian; in consequence, the work of our Soviet colleagues has remained largely unknown in this country. A recent volume, distributed to medical libraries by the Public Health Service, provides in English translation a series of "representative" publications from the Russian neuropsychiatric literature(2). Papers with specific reference to child psychiatry include studies in the conditional responses of neonates(3-6), constitutional "types"(7-8), verbal behavior (the second signalling systems in Pavlovian terminology)(9-13), and performance characteristics (will) (14). The notational and conceptual framework is Pavlovian; the experimental approach focuses on intensive study of a limited number of subjects rather than a large statistically analyzed series. The practical emphasis is notable throughout, with the implications for child rearing and pedagogy spelled out by the investigator. To judge from the bibliographic citations, there are a wealth of studies in areas, such as the neonatal period,

which have been far less extensively explored in this country. Novlyanskaya's paper on anorexia nervosa(15) makes heartening reading in view of the common assumption on these shores that the Soviet psychiatrist neglects motivational and psychotherapeutic considerations; with transposition of terminology, the findings harmonize remarkably well with the clinical themes evident in American studies of this disorder(16).

A very welcome addition to periodicals is the new and excellent British *Journal of Child Psychology and Psychiatry* under the aegis of the distinguished Emanuel Miller, who contributes a notable "discourse on method" to its maiden issue(17). Clarke and Clarke(18) review their own and related studies in maternal deprivation; without minimizing the importance of social measures to prevent this condition, they emphasize the positive gains that remedial measures can offer neglected children and conclude that the severity and permanence of the effects of the milder (and more common) types of deprivation have been overestimated in the earlier reports in the literature. That it is not the physical separation and institutionalization *alone* but rather that plus the experience of being rejected and remaining unwanted that leads to emotional difficulties and character defects is indicated by Kellmer Pringle and Bossio's study(19) on deprivation. Does manic depressive psychosis exist in childhood? This much-vexed question has been examined by Anthony and Scott in a scholarly paper(20) which reviews the available literature, offers a set of definitive criteria for the diagnosis, and describes a rather classical case with onset at the age of 12: this treatise should become required reading. Companion papers from the Maudsley by Hersov(21, 22) are significant additions to the literature on school phobia. In the first, 50 phobic, 50 truant and 50 normal cases are contrasted, with clear evidence for the psychoneurotic constellations in the phobic children and their families(21). The second examines the therapeutic outcome for 29 inpatients and 21 outpatients(22). Thirty-four were enabled to return to school, 12 were failures and 4 experienced relapses after initial success; somewhat at variance with findings in this country(23, 24), no significant correlation

could be established between outcome and age. Creak and Ini's (25) study of the families of 102 psychotic children emphasizes the variety of manifest attitudes displayed by these parents, with 13 of the mothers described as warm and 59 as average in maternal characteristics; they conclude: "This study hardly supports the view that parental personalities and child-rearing attitudes as seen in our sample are a principal cause of childhood psychosis." Yet in the same year Kaufman and his associates (26) have proposed the thesis that a psychotic core is found in the parents of schizophrenic children as they study them clinically. How are these antithetical positions to be rationalized? Differences in methodology are clearly important; the former study proceeded by clinical interview in the course of diagnostic examinations, the latter by long-term psychoanalytic investigation. There may very well be important differences in the composition of the groups of "psychotic" children studied; I have elsewhere commented on the heterogeneity of the conditions clinically categorized as childhood schizophrenia (27). The problem, however, goes beyond these matters to basic conceptualizations and interpretations as to the kind of evidence that is considered admissible to court. For the moment, the clash of opinion must remain irreconcilable.

It has long been recognized that the public school system with its almost total sampling of the child population and its captive audience offers an unparalleled opportunity for investigations of epidemiology and prevention; only recently have large scale efforts to capitalize on this situation been undertaken. A recent issue of the *Journal of Social Issues* (28) reports a number of important studies. The St. Louis studies (29, 30) indicate that teachers' judgments and ratings of academic progress succeed in identifying disturbed children, although social class is clearly a significant variable in influencing both teachers' and mothers' ratings of children (31). Bower's valuable monograph (32) concurs in the important conclusion that teachers are effective case finders when a variety of indices including sociograms and rating scales are made available to them. (The methods developed by Bower represent a significant contribution in them-

selves). A somewhat discordant finding has been reported by Goldfarb (33). In the Baltimore study, major discrepancies were noted between teachers' and clinicians' judgments on the same group of children; although both sets of raters reported similar percentages of children as in need of treatment, in only a third of the cases were they describing the same children. It should be noted that there were important differences in method between the former studies and the latter; generalizations from data must be phrased in terms of the questions asked and the methods used at this stage of imperfection in our techniques.

MENTAL DEFICIENCY

The past ten years have seen a revival of interest in the care of the defective that invites comparison with the spurt of progress in the early years of the 19th century when the first systematic medical studies were undertaken. This era may differ somewhat in the extent of the impetus supplied by scientific technology which has made possible the specification of enzymatic and chromosomal aberrations. But it shares the humanistic motivations of the earlier period. Then it was the philosophy of the enlightenment and the doctrine of human perfectability that gave courage to those who attempted to teach the deaf, the blind, and the imbecile; now it is the democratic belief in the dignity of the individual and the inspired crusade of parent groups through the N.A.R.C. that leads us to reevaluate practices which had become static and rigid. The history of what has happened can provide clarifying perspective to what is happening.

Leo Kanner, a contemporary pioneer in reintroducing mental deficiency as an area of legitimate concern for psychiatry, has embarked on a series of scholarly studies to be embraced ultimately in a promised monograph which should provide a definitive history of the field. The first two fruits of this endeavor have appeared in print (34, 35). Johann Jakob Guggenbuhl founded the Abendberg, a Swiss institution for cretins, that was to be the inspiration for schools for defectives throughout Europe and America (34). To enter upon so difficult an enterprise called for single-minded dedication

and an evangelical spirit; the enthusiastic reception that greeted his efforts led Guggenbuhl to devote himself to spreading the new gospel to the neglect of his responsibility to his own charges. Just at the point when his career was at the Zenith, his clinical accomplishments and his own integrity were challenged; his Abendberg was closed by an official commission—but not before it had sparked world-wide efforts to educate the retarded. A paper on Itard, Seguin, and Howe(35) serves to remind us once again of the role of the physician as a crusader for human betterment as well as a scientist. These essays repay thoughtful reading; perhaps they can recall us to a function that all too few of us have been willing to undertake on behalf of the defective. They provide a noteworthy foundation for the Adolf Meyer Lecture of Sir Aubrey Lewis(36), an insightful discourse on the social and scientific aspects of contemporary attitudes toward mental defect.

Exemplary of the new psychological research into mental deficiency in England are three studies by Lyle (in a new and welcome Journal) upon the effect of an institutional environment on the verbal development of severe defectives(37-39). The performance of mongol and non-mongol defectives in an institution and in a day school have been contrasted. Whereas the non-verbal "mental age" of all groups was similar, the verbal scores for the day school groups, both mongol and non-mongol, were shown to be superior. Inspection of the mongol data indicated that these children had less verbal skills than the non-mongol defectives and that they suffered *more* retardation in the institutional environment than did the non-mongols. When an experimental group of 16 previously institutionalized defectives were transferred to a residential family unit and nursery program with a higher staff/patient ratio, they showed significant gains in intellectual development in comparison with a control institutional population. This stimulating effect of an enriched environment has been shown in other English studies(40, 41) which reinstate the findings of some pioneer American investigations of the '30s(42). A useful bibliography of current research in the United States may be found in

a pamphlet issued by the Children's Bureau (43).

What factors influence the decision to institutionalize the defective? Parental rejection, I.Q., delinquent behavior, dearth of community services? In place of the clinical impressions we have had to rely upon in the past in order to essay an answer to this question, we now have a solid body of data provided by an excellent monograph on this subject by Gerhart Saenger(44). Personal and familial characteristics of retarded N. Y. city residents were contrasted for those in and those out of institutions. The finding that parental rejection is *not* a major factor is in itself a significant contribution that may finally lay the ghost of a widely perpetuated myth that makes even more difficult the plight of parents who must face this eventuality. The decision to institutionalize, the New York study demonstrates, relates to such considerations as: the severity of the retardation, low economic status and minority group membership, behavior difficulty (especially sexual acts), broken homes and parental inadequacy. Deficiency in community services is a determinant in the case of the severely but not the moderately retarded, since the latter are likely to be institutionalized for reasons other than the retardation *per se*. Collateral findings include the identification of Puerto Rican children committed as defective on the basis of incorrectly interpreted test findings that made no allowance for language difficulties!

Public policy toward mental deficiency continues to be influenced by deeply imbedded social prejudices and to reflect antiquated medical principles. Our responsibility as physicians clearly extends to our role as citizens. Much remains to be learned but surely it is inexcusable that what we now know is not being fully used.

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OCCUPATIONAL PSYCHIATRY¹

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Smith(1) in an article entitled "The Promotion of Health," points out that an increasing number of people are becoming exposed to an industrial environment and industrial medicine has to play more of a role in promoting the health of the nation. In industry today, injury, illness, frustration, and unhappiness bring suffering to employees and their families and problems to

management. Some of the circumstances which give rise to these mishaps could have been anticipated and avoided. Their prevention is the concern of industrial medicine, which draws attention to the existence of such circumstances and encourages action to obviate them. In order to deal with the multiplicity of problems, he feels a team approach is the most efficient.

VOCATIONAL REHABILITATION

Progress continues for the vocational rehabilitation of those persons who have had an emotional upset or a mental illness. Last year the Executive Committee of the President's Committee for the Employment of

¹ Appreciation is due the other members of the Committee on Occupational Psychiatry, APA, and American and foreign correspondents. Special acknowledgment is due to Dr. John Pixley, Department of Psychiatry, University of Cincinnati, School of Medicine for valuable help in the preparation of this article.

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the Physically Handicapped passed a resolution to study the problem of incorporating promotional responsibilities for aiding the employment of those persons with histories of emotional or behavior problems into its program, and asked Dr. Ralph T. Collins "to chair a subcommittee of the Medical Committee to make recommendations as to how best to carry out the intent and principles of the Executive Committee's Resolution." This Subcommittee on the Emotionally Restored reported the following decisions to the Executive Committee through its chairman, viz.:

1. The mentally restored and the mentally retarded should be included in the philosophy and the program of the President's Committee. The emphasis might well be placed on the mentally restored as these, by and large, are more employable, educable, and trainable. Also, there are many agencies, voluntary and others, who are working with the mentally retarded up to the age of 18.

2. There is discrimination against the mentally restored relative to employment and reemployment. This is a manpower problem and a humane one as well.

3. The gathering of data pertaining to this subject, the constant suggesting to Governors' Committees and grassroots local Mayors' Committees that attention be paid to this subject, and the "cautious approach" and the "deliberate speed" attitude, are recommended.

4. Suitable articles regarding this subject might be published in *Performance* and NEPH pamphlets. We agree that there is much education to be done at all levels of management, among the work force, within unions and the medical profession, including, of course, the psychiatrists and the mental hospitals.

5. We agreed that more effective communication should be developed between the psychiatrist, the plant physician, and the supervisors, all working toward the welfare and benefit of the employee and eventually the industry.

6. We agreed that although each case must always be individualized on a face-to-face and fact-to-fact basis, and that motivation of each mentally restored employee must be considered, this is of no avail un-

less top management has decided that the handicapped shall be employed and that all levels of management be so appraised and educated to the belief that "it really pays to hire the handicapped."

7. We agreed that the President's Committee can aid the mentally restored and the mentally retarded in its informational, educational, and promotional programs. We recommend that the President's Committee include these workers in its overall program.

The Executive Committee accepted the report and agreed to incorporate the mentally restored and the mentally retarded into its promotional program. Dr. Collins was asked to become a member of the Executive Committee and to chair a permanent Mental Health Committee. This committee would have equal standing with other standing committees of the President's Committee. Major General Melvin K. Maas, Chairman of the President's Committee for the Employment of the Physically Handicapped has issued invitations to individuals in many fields of endeavor to become members of this committee. The first meeting of this committee was held at noon at the Willard Hotel, Washington, D. C. on Friday, November 18, 1960. The staff of the President's Committee has been expanded and work has already begun for this purpose.

During this past year, there has been an increase in programs devoted to the employment and reemployment of those persons who have had a mental illness. These have been sponsored by voluntary mental health agencies, governmental agencies and hospitals and Governor's and Mayor's Committees on the Employment of the Physically Handicapped. It is to be noted that the word physically has been dropped from the official title of a few of the Governor's Committees.

Simon(2) broadens the definition of psychiatric rehabilitation to include the therapeutic use of the self. This relationship is designed to meet the patient's needs enabling him to communicate well with others and in general increasing his participation in the social group. Rehabilitation includes "every aspect of the treatment of the whole person." It is depicted as including 6 areas of living (psychological, vocational, family,

socio-recreational, educational and community). Simon feels the community physician will play a very important role in fostering a continuum from mental hospital-integrated living and the industrial physician "can play a very crucial role in psychiatric rehabilitation."

Hewitt(3) points out that the tradition of state supported mental illness in large institutions is now being replaced, to a large part, by small short term outpatient clinics, day and night hospital facilities, half way houses and the like. He also speaks favorably of the increasing role played by vocational rehabilitation programs. As trends: the industries and unions are now often underwriting the cost of mental illness for their workers and in this state of change, he makes a plea for coordination in planning future mental health facilities.

EDUCATION AND TRAINING

Increased educational and training opportunities are now available in residency programs in the United States. Among these elective experiences are rotation through the occupational psychiatry program at the Department of Psychiatry of the University of Cincinnati and at the University of Minnesota. Both programs are stimulating active interest of eligible third year residents. Cincinnati has started its occupational psychiatry training with two residents currently participating on a half-time basis; Minnesota with one for one-half day per week. For the fifth year at the Menninger School of Psychiatry second year residents are offered a 12 session seminar in occupational psychiatry; 14 residents are currently enrolled. The Cornell University two-year fellowship program continues active for post-residency training.

For physicians in occupational medicine, week-long annual seminars are conducted by the Division of Industrial Mental Health of the Menninger Foundation. One hundred physicians have attended thus far. Psychiatry is included in many training programs in occupational medicine such as those at the University of Cincinnati, at New York University, and in the preventive medicine courses of the American College of Physicians. Psychiatry training for physicians in

single companies appears also to be an increasing trend.

1960 also demonstrated an increase in training programs for executives and management personnel in understanding emotional problems in the work situation. Such courses are sponsored by academic, community and business organizations. More than one hundred such programs were conducted. A few illustrative ones were those of the Conference on Mental Health in Industry at Allenberry, Pennsylvania, those sponsored by Temple University Department of Psychiatry, the Division of Industrial Mental Health of the Menninger Foundation, the University of Arizona, Arizona State University, the University of Colorado, the Phoenix Institute of Neurology and Psychiatry, the Connecticut Mutual Life Insurance Company, and many local, state and national mental health societies.

NEW APA PUBLICATIONS

In 1960 the APA Committee published a pamphlet *Troubled People on the Job* designed for those in supervision and management in industry. Sales exceeded 22,000 copies during the year. The committee also began publication of a quarterly *Newsletter* summarizing current activities in the field both in this country and abroad.

EXECUTIVES AND MENTAL HEALTH

Habbe(4) reports on some 200 executives from 80 corporations who, in discussing the aims of business, came to the conclusion that total health (mental and physical) of the corporation was very important. The conclusion that the cost of neglecting mental health was probably about four times that of caring for it adequately was expressed. Resolutions were passed to attempt to utilize more psychiatric manpower toward this end, and relieve the load which was falling on relatively few.

Hayes and Hayworth(5) in an article entitled "Psychiatric Breakdown in Higher Executives" state in substance that of the factors commonly supposed to be important in executives' breakdowns only work was doubtfully ascribed significance, while fatigue as such did not emerge as an important part of the stress involved. No

special type of psychiatric illness seemed to occur in the executive group and such significant differences as are to be seen reflect, if anything, the "better" type of personality possessed by the executive group (as compared to the worker control group). The authors plan to follow up with a more definitive study on the above model.

An article entitled "The Health of the Executive" (6) which appeared in the transactions of the association of industrial medical officers, examines critically the hypothesis that today's executives are suffering unduly from 3 categories of disease (cardiovascular, psychosomatic and psychoneurotic) and finds little clinical evidence to support that they are. The question is raised as to the amount of stress being placed on the second tier of management and if actually this is not the most logical population to suspect. Here also, there is no definitive evidence. The suggestion is made that a critical evaluation of 20th century living, including job evaluation may be productive.

Robinson (7) in an article entitled "Stress" enlarges Selye's definition of stress to "anything which threatens the biological integrity directly (physical or chemical) or indirectly (symbolic meaning)." It therefore denotes combined subjective and objective physiological and psychological reactions which in certain conditions may become pathological. The objective assessment of stress is not adequate for indicating early manifestations; we must rely on clinical judgment and subjective experiences. He then makes a strong point for some of the beneficial aspects of stress and debunks the implication that stress is "bad." He discusses stress diseases, pointing out that the starting point is a "threat to security" and followed by a chain reaction with organic and psychological feedbacks. In concluding, the author warns us against being too quick to treat only the organic aspects of stress diseases.

AUTOMATION

In the *Bulletin of Hygiene*, April, 1960 (8) there is a report to a study group of the mental health problems of automation. This study, using as a definition for automation, "the coming together of several relatively independent streams of technical

progress" outlines 3 distinct fields: 1. Highly developed mechanization; 2. Control of machines by machines; 3. Development of electronic digital computers. The 3rd field is singled out as being to mental health as important as the industrial revolution was in upsetting the status quo. People live and adapt within groups, and threat of change may produce reactions which are as real as if actual changes have occurred. The two resulting problems, actual change, and anticipation of change must be taken into consideration and techniques to handle them smoothly must be evolved if we are to maintain efficiency and worker health. There is a need for more research into the adaptation of the individual, the family, and the community to automation.

INDUSTRIAL ACCIDENTS

Deverell (9) briefly gives some historical background, then discusses various theories. (a) Law of Poisson: Not felt to be accurate, even though certain individuals do exhibit accident proneness, this would not eliminate accidents. (b) Heinrich's pyramid and law of chance. The author utilizes this theory as important in accident prevention. (c) Accident causation: Felt to be about 75/25 with management at 25%. This indicated that the employee must be motivated for safety. Under the heading of human failing accidents, the author feels the main failure is management's; by not properly training, using propaganda or incentives effectively or making employees obey self discipline they are responsible for this category of problems.

He then discusses environment and personal factors, pointing out men work as they live; that physical conditions do affect accident rate and that if proper supervisory levels are maintained size of factory has nothing to do with number of accidents. Research into fatigue and accidents is inconclusive and absences following accidents are individually determined. In this respect, a limit setting homogeneous group can be effective however.

FOREIGN CORRESPONDENCE

Dr. van Alphen de Veer has suggested that the following publications should be

included in this review of occupational psychiatry :

1. H. R. Wijngaarden : The influence of work on mental health. (Maandblad v. d. Geestelijke Volksgezondheid nr. 15.)

2. Dr. J. J. A. Vollebergh : Human Freedom in an organised industry. (Maandblad v. d. Geestelijke Volksgezondheid nr. 15.)

3. Dr. P. J. Willems : The adaptation of work to men. (Maandblad v. d. Geestelijke Volksgezondheid nr. 15.)

4. Dr. G. J. Fortuin : Psychological aspects of the adaptation of work to the worker. (Maandblad v. d. Geestelijke Volksgezondheid nr. 15.)

5. A. H. Hutte : Design of a worksociaty in the Netherlands. (Mens en Onderneming nr. 13 1959 en nr. 14 1960.)

6. Co-operation between industrial doctor and industrial psychologist. A symposium. (Tijdschrift voor Sociale Geneeskunde, Jaargang 38 nr. 22.)

Dr. van Alphen de Veer read a paper entitled "Mental Health in Industry" at the 13th annual meeting of the World Federation of Mental Health at Edinburgh, Scotland in August, 1960. In the opening remarks of this paper he made the following points :

Mental health means : (a) full development of human abilities ; (b) growth to emotional maturity ; avoidance of neurotic tensions ; (c) ability to handle relationships with individuals and groups in accordance with existing cultural patterns(10).

Here is a definition given by Prof. Koekebakker in 1952 on the Seminar of the W.H.O. at Leiden, that will be useful to us in our study of the mental health situation in industry. Speculation about the full development of human abilities and the advance to emotional maturity immediately raises the question as to what extent, in general, work in industry offers an opportunity for these things. Or, on the other hand, does work in industry constitute an obstacle to them ? The question cannot really be formulated in such simple terms, for technological development and the development of the human personality are two entities with different dimensions. Nevertheless, to create as favourable a climate as possible for the worker, and to organize his work in such a way as to promote mental health,

these constitute a task of the highest importance in the field of mental hygiene. Again, how far can we hope to succeed in these endeavours and what is the correct way of approaching the problems involved ? Here, it is clear, we are standing on the verge of an extensive territory that has already been reconnoitred from all sides. Much has been done to investigate mental health in industry, and a great deal has been written about the subject, and this makes it difficult to give a succinct review of the present position. Still, it seems to be high time that the matter was raised once again.

RESEARCH

The Industrial Mental Health Project of the University of Cincinnati, College of Medicine has completed its first phase of study, a follow-up of employees who had been seen in industrial psychiatric conferences over a period of ten years. The most striking finding statistically was the highly positive correlation between measures of improvement and the degree to which recommendations of the conference had been carried out. The team is now collecting data on problem cases (absenteeism, accidents, interpersonal difficulties and frequent dispensary visitors) and on controls, with split half comparison, of the sequels following psychiatric recommendation, with the sequels following psychological testing and collecting data on problems without mental health interview(11).

Accidents are the concern of a report by Collins(12) in which it is noted that accidents showed a positive correlation between ethnic group, age (highest in 26-35 group, lowest in over 56 group), day of week (highest on Monday). Modlin(13) reports on patients referred to the Menninger Clinic with a presumptive diagnosis of "traumatic neurosis." Focus is on clinical analysis of the psychological stress factor in the traumatic neurosis syndrome frequently seen following accidents. Two sets of circumstances are identified as operative in initiating the syndrome : 1. The patient-to-be experiences a brief forewarning of impending disaster, or, 2. The accident occurs suddenly, unexpectedly and without forewarning. Leopold and Dillon(14) summar-

ize their findings of 47 cases of whiplash injuries of the neck, pointing out that evaluation of the psychiatric factors is difficult because of the frequency of concomitant cerebral concussion.

The successful placement and adjustment of cardiacs continues to be the concern of industry. Gelfand, *et al.* (15) report findings on 117 cases seen in a Cardiac Work Classification Unit. The unsuccessfully vocationally adjusted group was composed of predominantly obsessive-compulsive personalities. Schedules for collection of data and a method of approach to the problem by a team of specialists are described. Weaver (16) gives an analysis of his experience in the selective placement of cardiacs in a large refinery. The program utilizes the matching of the workers capacities with the physical demands of the job.

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SOCIAL PSYCHIATRY

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INTERDISCIPLINARY APPROACH

Interdisciplinary research projects in which psychiatrists work with social scientists seem now to be a well-established and increasingly valued principle of approach to the problems confronting psychiatric theory and practice. Results of such teamwork are illustrated by the reports of the Joint Commission on Mental Illness and Health, comprising several important publications (1, 24, 30, 57). The bulletins issued by the World Federation for Mental Health in conjunction with World Mental Health Year activities (72), and the publications of the World Health Organization (60, 67, 73,

74, 75) exemplify international cooperative endeavors.

MANPOWER STUDIES : THE PROFESSION, ITS INSTITUTIONS, AND THE COMMUNITY

Clearly, the manpower crisis facing psychiatry and the other mental health professions in the more highly industrialized societies has had its great share in stimulating such interdisciplinary research activities. A number of studies suggest the importance attached to manpower considerations in the problems facing psychiatry now and in the foreseeable future (1, 7). Albee, in his study for the Joint Commission, concludes that "we should at this time withdraw some money and manpower from the support of treatment services (with full realization that

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this means further neglect of already poorly cared for patients) and use the competent manpower and money for research on causes and more effective treatment of mental illness." Patterns and problems concerning recruitment of psychiatric manpower, and associated problems of the medical curriculum at both undergraduate and graduate levels, thus constitute a major area for investigation with the obvious hope that satisfaction of the critical need for rational design and planning of manpower resources will be achieved (28, 36). Corollary to this is the urgency of the need for planning institutions and community services that will more effectively serve needs for psychiatric services. Continuing reports of psychiatric institutions, such as that of a state hospital viewed as a small culture or society (related, to be sure, to the values and organizing principles in the society or dominant culture at large), are thus not only of great potential value for effecting reforms in the particular institution being studied, but also in setting into clearer perspective the problems of over-all professional and social planning (22, 43, 47, 64). The rapid growth and development of the "open door" policy in large mental hospitals, and increasing interest in the elements of a therapeutic community and in such services as psychiatric home-care programs, halfway houses, and other specialized aftercare facilities attempting to cope with the rehabilitation problems of former patients, psychiatric units in general hospitals, community mental hygiene clinics, and special services for particular groups in the population (e.g., the aged, alcoholics, criminal offenders), represent converging patterns of the effects of social psychiatric research efforts, changing exigencies of psychiatric manpower resources, and the increasing awareness of the general public of its mental health problems (8, 9, 25, 32, 38, 41, 59). Another publication of the Joint Commission documents, via the results of a detailed interview schedule administered to a probability sample of the entire American population, "what Americans think of their mental health" (30). This outstanding study reveals that the major national issues, the international situation, the threat of atomic fallout, the housing shortage, crowded highways, etc., appeared to

be an important source of worry to few people whereas everyday personal tribulations with which people are faced (health, families, children, money, job situations) constitute the common concerns of most people. Assuming this information to be valid and reliable, one can only wonder at the social and psychiatric implications in such a seemingly basic unconcern with momentous problems—or the massive denial of them.

TRANSCULTURAL AND CROSSCULTURAL PSYCHIATRY

The contents of the *Transcultural Newsletter* (71) help provide a picture of developments in psychiatry in various cultural settings around the world. Opler's reader (54) in "Culture and Mental Health" also serves as a good bibliographic source to studies in diverse cultures. The reprinting in this volume of classic papers by Wittkower and Fried, Lin, and others, as well as a wide representation of papers published for the first time, offers a sound introduction to this important literature. In the rapidly developing unindustrialized nations, where the need for sanitary reform and adequate nutrition in public health practice far transcends in importance the considerations of mental health resources at present, it is encouraging to witness, nevertheless, an enlightened concern for use of epidemiological studies to plan the orderly development of psychiatric services. One may justly hope that this will help avoid some of the costly errors in the development of psychiatric practice in Western Europe and America during similar periods in their technological growth. The variety of studies accumulating from the four corners of the world is gratifying (5, 6, 12, 20, 21, 33, 34, 35, 42, 58). A classical problem in transcultural psychiatry which continues to be explored is the relationship of migration to mental health (11, 19, 23, 26, 45, 48, 49). The rapid cultural and social changes in many parts of the world associated with population movements, technological developments, former colonies achieving independence, rural-urban migration, etc., constitute a natural "experimental opportunity" for epidemiological investigations. Earlier studies in migration in relationship to mental health

were used in this country to justify restrictive legislation on immigration. Such use of tentative conclusions in the service of discriminatory social legislation would now seem clearly to have been unwarranted (66).

It is well to bear in mind that in the absence of adequate systems of classification and nomenclature, many crosscultural studies tend to be hopeless conglomerations of disparate observations. Without more systematic and standardized methods of reporting results, it seems premature at this point to hope that factors of universal significance in the etiology of mental disorders (non "culture-bound") will be separated out by such studies (13, 67, 73).

EPIDEMIOLOGY AND PSYCHIATRY

The methodology which promises to provide a uniting element in social psychiatric research is that offered by the application of the epidemiological approach (long recognized as the basic tool of preventive medicine) to the study of psychiatric problems.

Several important statements on the general applicability of epidemiological methods and their limitations in psychiatry have appeared during the past year. Two of these are excellent and succinct summaries published under the auspices of the World Health Organization, and another of the volumes in the Joint Commission series also summarizes the progress to date in applying the general principles of the epidemiological method to mental disorders (17, 27, 52, 57, 60, 73). These reports, taken together, represent a basic and indispensable statement in this field and present recommendations pregnant with possibilities for productive research.

It is obviously impossible to review in this brief survey all the recent publications demonstrating the application of epidemiological methods in psychiatric research. We can only cite several to illustrate the catholic nature of these applications. The first volume of one of the most ambitious undertakings to date has now been published, which outlines the general research design and formulates the major hypotheses of this monumental project (44). The succeeding volumes presenting the results obtained in the Nova Scotia study are anxiously awaited

for the wealth of information they will undoubtedly provide in respect to incidence and prevalence of mental disorders in the study population, support for hypotheses concerning the relationship between social disorganization and the occurrence of illness, and pointing the way to further investigations. The other major epidemiologic survey awaiting publication, the "Midtown Manhattan" project of Rennie, Srole, *et al.*, will also undoubtedly add greatly to our existing fund of knowledge in similar dimensions.

Actually, studies utilizing the epidemiological method in psychiatry have been performed for many years. It is to be hoped, however, that the clearer formulation and wider dissemination of the principles of epidemiology among the mental health professions will result in more careful and specific planning of research projects.

Follow-up Studies: For example, follow-up studies in psychiatry (which until just recently have been all too few and far between) represent an ideal opportunity for use of an epidemiological model. The study by the late Dr. Norris of "Mental Illness in London" represents one of the more sophisticated efforts in dealing statistically with a cohort of hospitalized patients (53). This and other studies of follow-up, be they of a specific diagnostic entity or syndrome (2, 39, 46, 61, 62, 65), of specific treatment modalities (14), or other similarities in the group being studied, holds the greatest promise for refining our present notions of the natural history of psychiatric disorders (56, 63). The follow-up study application of epidemiological techniques (as distinguished from the non-longitudinal or cross-sectional survey applications) also should yield important clues concerning etiology. Such studies as those of Wilner, *et al.* (70), in the field of housing in relation to social and health adjustment, are also worthy of particular note.

Innate and Acquired Etiological Factors: Another facet of application of epidemiological methods is demonstrated by studies in genetics and the social structure of small groups, especially the family. An excellent review of the status of knowledge in genetics is given by Böök, in a book edited by Jackson, and in another publication (10,

37). In Jackson's collection are to be found other important statements regarding the etiology of schizophrenia (including his own critical review of the field) from the standpoint of family dynamics, sociology, biochemistry, physiology and psychology.

Work on the families of patients with mental disorders utilizing the index case approach, exemplified by the studies of Lidz and Fleck(37) and others(15, 29, 31, 68), represents still another aspect of epidemiological research. The reader edited by Bell and Vogel provides an excellent selection of writings pertaining to the family (4).

Studies of social factors influencing length of hospitalization(16, 18) and specific events in the life histories of patients(3) illustrate other features of application.

The studies of Pasamanick, *et al.*, regarding such variables as prematurity and seasonal variations in births(40, 55) have recently been discussed and challenged in a provocative critique of their statistical methods and assumptions(69). Aside from the specific points at issue in this particular controversy is the sobering realization that once results have been published as "facts," they tend to assume a peculiar life of their own, becoming divorced from the body and context of the investigation from which they derived.

SOCIAL THEORY AND MEDICAL SOCIOLOGY

Analogous to the interdisciplinary excursions by psychiatrists into the social sciences is the venture of social scientists into the world of medicine and psychiatry. The social scientists' approach to medicine, initially concerned primarily with the field of psychiatry, is rapidly extending to other areas of medicine: its practice, institutional roles, and structures. The importance of this development as a potential in providing feedback of psycho-social information to the medical professions in general can hardly be overestimated.

In the enthusiasm for gathering data which is best exemplified by the ever-widening application of the epidemiological model, it becomes increasingly important not to overlook and relegate to dusty corners the great germinal ideas in classical sociology and psychiatry. Perhaps the danger of

doing so is less in psychiatry, where in a half century's growth of schools of psychoanalytic thought abundant numbers of hypotheses and theories to be tested have emerged in the areas of personality development, etiology of illness, and the relationship of the individual to society. Mills, in presenting and stressing the case for re-studying the classical tradition in sociology (50, 51), has revitalized the contributions of sociological theorists as a legitimate stimulus for creative explorations in social psychiatric research.

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CLINICAL NEUROLOGY

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CIRCULATION

Brain injury predisposes to early cerebral strokes(6). An elongated carotid is apt to kink when the head is turned to that side (172). In Carotid Sinus Syndrome, in addition to slowing of the pulse, the intra-arterial pressure falls and with narrowed cerebral vessels may cause focal symptoms(90). An electrocardiogram should be done in all stroke patients to identify any underlying recent myocardial infarct(177).

Occlusion of the internal carotid is confirmed by ophthalmodynamometry, 80 percent of the time(203). A bruit is audible over a stenosed carotid in slightly more than half the patients(166). Compression of the carotid low in the neck causes syncope about this frequently with proved occlusion of the opposite carotid(204). Absence of the carotid pulse in the pharynx is a little more reliable. Diminished carotid pulsation in the neck is least reliable. A bruit is sometimes audible at the base of the neck in vertebral occlusion(166). Nearly half of the patients with carotid occlusion have a partial Horner's sign(89).

Half the patients with basilar artery thrombosis give a clear history of previous ischemic attacks, and circum-oral numbness is often described(4). Large lesions of the tegmentum between the third and seventh nerves cause coma ; lesser lesions may cause akinetic mutism(41).

Persistent coma and severe underlying cardiovascular disease worsen the prognosis in a stroke(89). However, even bilateral

carotid occlusion does not necessarily give a bad prognosis for life(78). Of 100 consecutive cerebral artery thromboses, 10% returned to their former work ; one-third to part-time work ; 10% died in hospital, and one-third died within two years(47). Impaired visual spatial discrimination in right sided lesions may interfere more with vocational rehabilitation than aphasia does(101).

A third of patients dying with peptic ulceration have had a stroke(44). Lesions of the orbital and posterior parts of the frontal lobe are associated with renal tubular necrosis, perhaps due to renal vasoconstriction(210).

Atheromatous lesions of the circle of Willis in 1,175 autopsies were most frequent and severe at the upper and lower basilar, bifurcation of the carotid, first third of the middle cerebral and first part of the posterior cerebral arteries. Forty to eighty were the ages most affected ; however, 2% of those under 40 had severe atherosclerosis and 10% of those over 80 had none(10). Emboli, thrombi, plaques or intimal fibrosis were found on careful inspection of sulcal vessels, supplying all but two of 21 infarcts limited to one or adjacent gyri in the absence of deep lesions or trunk artery occlusion(229). Arab(7) describes an homogeneous refringent protein deposit in the muscularis layer of stenosed or dilated cerebral arteries of 50 patients, mostly hypertensive.

Only when there are ominous signs in malignant hypertension should blocking agents be used, particularly if there is occlusive vascular disease, for thrombotic epi-

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sodes are apt to occur as the blood pressure falls. Patients having small strokes are not apt to succumb to massive intracerebral hemorrhage, and are not helped by lowering the blood pressure(84).

Even keeping the room cool by air conditioning when it is hot and humid increased survival from ischemic brain lesions in rats (222).

When capillary pressure fell due to carotid artery occlusion and vision was gradually fading, McCulloch(143) was able to restore blood flow and save sight by lowering intraocular pressure, first with acetazolamide and then, cyclodiathermy.

Although the prothrombin test is highly reproducible, periodic monitoring is essential, particularly if patients are bleeding. Increasing microscopic hematuria is as significant as an increasing prothrombin time (147).

Ouren(162) has devised a new "thrombotest." Crude cephalin, thromboplastin, absorbed bovine plasma and calcium chloride form a single stable reagent which measures the coagulation factors of the intrinsic and extrinsic clotting systems in capillary blood, citrated blood or plasma. Matthews and Walker(140) confirm its superiority to the Quick test.

No benefit was seen in the half of a group of 51 patients with acute non-embolic, non-hemorrhagic strokes randomly assigned to anticoagulant therapy, and three died of massive intracerebral hemorrhage(139). Carter(33) found no benefit from anticoagulants in sudden, complete paralysis, but there seemed to be some benefit with ingavescent and incomplete paralysis. In a controlled study of patients with myocardial infarcts on token and adequate anticoagulation, the latter failed to prevent further infarcts or death, and hemorrhage was a serious and not infrequent complication(135). Denny-Brown(50) recommends anticoagulants only for embolism and for thrombosis would try to correct the low blood pressure, anemia, cardiac or vascular disease. Carotid surgery is successful only in otherwise healthy patients whose carotids are stenosed, not occluded(53).

In subarachnoid hemorrhage, the severity and duration of disturbed consciousness is the most reliable prognostic sign, though old

age and hypertension increase the risk(18, 170). Of eight patients with ruptured anterior cerebral aneurysm, 7 had infarcts in the vessel's distribution(21).

Of 244 patients with primary intracerebral hemorrhage, 20 percent had no blood in the cerebrospinal fluid(145). Angiograms were normal in 53, so ventriculography should be done if there is doubt. Prognosis was poorer with hypertension and coma. Deep hemorrhages had the highest mortality. Early tracheostomy was helpful.

Intracerebellar hemorrhage causes brain stem, rather than cerebellar symptoms(174). Vertebral angiography is not helpful. Three-fourths are seen in ventriculograms. McKissock(144) recommends evacuating the clot.

Cortisone treatments of half of 40 patients with polyarteritis nodosa possibly postponed death, but did not affect the outcome at three years. For a few it caused distressing complications(132). On steroid therapy only 2 of 23 eyes affected in giant cell (temporal) arteritis regained useful vision. However, steroids should be used and continued for two years if partial vision remains (184).

In congestive heart failure, mental symptoms are ominous, reflecting decreased blood flow and oxygen uptake(196). In cerebral degeneration decreasing oxygen uptake parallels dementia(117).

Migraine can be deadly(8). "Ophthalmoplegic migraine" is usually due to an aneurysm of the circle of Willis. Paroxysmal tachycardia is common in migraine families. Ergotamine may cause cardiac arrest in the patient with a slow pulse. Interstitial nephritis leading to uremic death is increasing, perhaps due to prolonged use of phenacetin by these patients. A reliable ergotamine tartrate makes treatment available and convenient, with side effects about equal to parenteral ergotamine(77, 207).

INFECTION

Tuberculous meningitis can be reliably differentiated from other lymphocytic meningitides by a Bromide serum-to-cerebrospinal fluid ratio below 1.4. Counting radioactivity in blood and cerebrospinal fluid samples 48 hours after giving 50 microcuries of Br^{82} by mouth gives clear cut results

independent of protein and cells in the cerebrospinal fluid(42).

Ophthalmological complications are equal whether or not tuberculous meningitis is associated with miliary tuberculosis. Nystagmus and pupillary disturbances are the most ominous complications(150).

The best treatment of tuberculous meningitis is intramuscular streptomycin, PAS and isoiazid(230). Steroids should be added in children under one year old or unconscious on admission(128) or for papilloedema(150).

In leprosy, a disorder of lipid metabolism was found in the essential cell(91). Diaminodiphenylsulfone (DDS) is the best drug for leprosy, but Ciba 1906 and Etisul are powerful adjuvants usable for a few months(46).

Pneumococcal meningitis is so fulminating it still causes 50 percent mortality in adults(180). It should be suspected in diabetes and skull fractures. Early craniotomy for decompression is often required, as well as intramuscular penicillin and intravenous sulfonamides.

Recurrent attacks of bacterial meningitis may be the only sign of skull fracture(22). Sharp-object wounds of the eyelid may penetrate the roof of the orbit, particularly in children(79). One ml. of fluorescein intraspinally and observation of nose, ears, etc. under ultraviolet light helps to identify cerebrospinal leakage(107).

Cerebral dysfunction 10 days after infection of ears or respiratory tract in children may indicate brain abscess(158).

In leptospirosis headache persisting beyond a week usually means an immune reaction meningitis which will be self limited as are the other brain and nerve symptoms at this time(54).

Boshes(23) has reviewed current management of fungus infections of the central nervous system.

In Toxoplasmosis, the parasite can be isolated from blood and occasionally cerebrospinal fluid in the acute stage. The dye test, hemagglutination and complement fixation tests become positive in that order. The skin test is positive after the acute stage. Pyrimethamine (a folic acid antagonist) increases the effect of triple Sulfona-

mide treatment eightfold, but it may depress the bone marrow(178).

Syphilis should not be diagnosed on the basis of one specimen of serum(131). Biologic False Positive (BFP) reactions become more pronounced during intercurrent infections. BFP's occur more than twice as often in infants whose mothers have BFP than those whose mothers have syphilis(152).

In neurosyphilis the treponema pallidum complement fixation tests (tpcf-50) is as sensitive as the TPI test(24). Tests using Reiter protein antigen, which is derived from a tube cultured spirochete and therefore cheaper, are as specific as the TPI test, but may be non-reactive in some older syphilitics(30, 173).

Two rapid reagin tests on unheated sera (RPRUS and USR) are as accurate as the VDRL(25), and can use the same blood specimen as is drawn for blood sugar if sodium fluoride is used as anticoagulant(98). A fluorescent treponemal antibody test (FTA) depends on an additional antigen similar to reagin(154).

The majority of 1,489 children with poliomyelitis had an acute onset and continuous course. One-fifth of the infants had no increase of cerebrospinal fluid cells, and half in all age groups had no increase of cerebrospinal fluid total protein at the onset of paralysis(123).

Mass use of vaccine at the time of an epidemic has no effect on the course of the epidemic. One injection now gives 50 percent protection, but four are needed for 95 percent protection. By increasing potency and the use of adjuvants, Salk(188) foresees a single injection technique.

Oral administration of attenuated virus has been effective and uncomplicated in children in Philadelphia(164), Louisiana(68), Mexico(187), Estonia-Latvia(186), Belgian Congo(118, 169), and Cuba(57). Intercurrent viral or other infections were not aggravated. Best results occurred when temporary dominance of the polio-viruses was achieved by giving large doses to the whole community at the season when other enteroviruses were least active. Previous Salk vaccination does not interfere. Ninety-five percent of adult non-reactors

were immunized to Types 1 and 3, but only three percent to Type 2(185).

Although genetic and serologic tests have found the viruses stable through several human passages(109), neutralization tests demonstrated changes(67) and neurovirulence for monkey spinal cord had developed in excreted viral progeny of a Sabin strain (153).

Vaccine protection against polio is making paralysis due to other viruses more conspicuous(119). But three-quarters of those with paralysis still have polio(148).

Spencer, *et al.*(208) discusses the cardiovascular complications of severe polio.

The cerebrospinal fluid is a better source of virus during the acute phase of aseptic meningitis, but may be sterile 6 days later (189). Complement fixation tests now reliably identify the viruses as compared to neutralization typing(74).

Forty different viruses were isolated from 713 patients(148). Enteroviruses were commoner in late summer and fall, lymphocytic choriomeningitis in winter and mumps in winter and spring. Death or serious sequelae most often resulted from arthropod born viruses and herpes simplex. Tuberculosis and fungus infection had a less acute febrile onset.

Mumps meningoencephalitis was established by isolation of virus from cerebrospinal fluid or hemagglutination tests in 38 percent of 56 patients(146). Sixteen had no salivary gland involvement. There were no serious sequelae. A third may have headache and nervousness a year later(156).

Herpes simplex can be activated by adrenalin(192).

Tissue culture and antigen precipitation techniques support the theory that Herpes Zoster is a reinvasion of tissues by latent chicken pox virus. Zoster complicates chronic rather than acute leukemia, particularly after radiation, alkylating agents or steroids perhaps due to a decrease of gamma globulin(197).

Although some reviews(60) say infectious mononucleosis causes many neurologic symptoms, Hoagland(87), applying rigid criteria, found them rare.

Brierly, *et al.*(28) report a subacute encephalitis of late adult life affecting mainly limbic areas of the brain. Three patients

were depressed, became progressively demented and comatose. One had temporal lobe seizures, but none had myoclonus or athetosis as in the Dawson-van Bogaert type. No virus studies were made. No virus was found in four cases of subacute necrotizing encephalitis(79).

METABOLISM

A case of Wilson's Disease with normal serum copper and ceruloplasmin supports Uzman's suggestion that the ceruloplasmin deficiency is secondary to a defect of protein metabolism producing proteolytic residues with high copper affinity(182). Cartwright, *et al.*(34) found poor correlation of ceruloplasmin levels and duration or severity of symptoms. Ceruloplasmin was low in normal newborn infants, an infant with idiopathic hypercupremia, some patients with sprue and a few with nephrotic syndrome. There was no improvement in Wilson's disease patients when ceruloplasmin increased in pregnancy, with estradiol or injections of ceruloplasmin. Ceruloplasmin deficiency can now be detected by placing a drop of serum on specially treated paper(1), or using starch gel electrophoresis(43).

Treatment to minimize copper absorption and increase its excretion may improve neurological symptoms but the liver is unchanged(190). One patient's fulminating course was aggravated by BAL and versenate(88). Four of five Wilson's disease patients had hypercalciuria, without hypercalcemia or increased alkaline phosphatase (126).

Hepatic stupor is more closely related to liver failure than to abnormal portal circulation(227). Chronic hypoxia interferes with the liver's ability to detoxify ammonia(5). The respiratory alkalosis of advanced cirrhosis may be compensatory to protect brain function(171). At autopsy, one of three cases of paraplegia in shunt encephalopathy had astrocytosis and demyelination of the pyramidal tract in the cord(233, 234).

Because non-hepatic patients with asterix due to chronic pulmonary, renal, cardiovascular disease or prochlorperazine toxicity were confused, Conn(36) ascribes the flap to malfunction of the reticular formation.

Ellenberg(55)* comments on a tendency for diabetic neuropathy to follow some stress such as surgery by one to four weeks, and compares this to the latency of infectious polyneuropathy, *etc.* Cord tumor should be ruled out by myelography if cord bladder or bowel appear in diabetic neuropathy(224). Larsen(115) has published a color photographic atlas of diabetic retinopathy.

Ophthalmoplegia develops and clears in relation to the thyrotoxic state of a tenth of thyrotoxic patients(193). Muscular weakness and atrophy, mainly proximal, developed in half of 42 hyperthyroid patients. Creatine was increased in all, and EMG changes were myopathic. Neostigmine did not alter fatigability. All responded to treatment of the thyrotoxicosis, most rapidly to iodine(72). Fifteen years after surgical treatment of Graves disease, ophthalmoplegia was unchanged in half, better in one-quarter, and worse in one-quarter(80). Twenty-eight patients in 18 families with goitre had congenital perceptive deafness, and in some cases defective vestibular function(64). Treatment of myxoedema stopped the convulsions of one patient(61) and cleared the ataxia of six(95).

Weakness was caused by hypokalemia in 10 patients with renal tubular disease(161).

The behaviour of two phenylpyruvic children, 4 and 7 years old, with I.Q.'s of 67 and 93, improved on a phenylalanine restricted diet(211).

NEOPLASM

Electronmicroscopy of brain tumors by Luse(130) gives added reason to believe glioblastoma multiforme is a grade 3 or 4 malignant astrocytoma. In oligodendroglioma mitochondria are usually few and small, but may be as large as nucleoli. The cells of meningioma of endothelial type resemble arachnoid cells. Neurofibromas have interlacing bands of collagen.

In a similar study(159) of tumor vessels, there was evidence of increased metabolic activity of the endothelium, an increase in periodicity of the collagen fibrils and numerous shunts, glomeruli, lacunae and aneurysmal vessels in glioblastoma multiforme. The vessels of astrocytomas and oligodendrogliomas were normal. Columnar

growth of metastatic bronchogenic carcinoma caused the vessels to be parallel.

At the Montreal Neurological Institute, 534 primary tumors of the brain, excluding 112 of the pituitary, were treated with tumor doses of 5000 to 6000 over 50 days via multiple portals(26). Most of the tumors had not been completely removable by surgery, yet all did better than those with similar tumors treated by surgery alone. There was no evidence of damage to the unshielded pituitary of 30 children. There were no corneal opacities. Only one adult retreated through the same portals had histologic evidence of post-radiation necrosis. Operative decompression is advised before radiation of inaccessible brain stem tumors.

Increased mortality in thiamine deficient mice with induced gliomas was due to increased bleeding in the tumor, rather than altered malignancy(27).

Three-quarters of 93 patients with acoustic neuroma had unsteady gait, half had vertigo, 80% had spontaneous nystagmus at the limits of binocular gaze, at first to the unaffected side. Audiograms were rarely normal, and only slight to moderate deafness suggested that the tumor was not an acoustic neuroma. Adequate masking avoided false, conduction type responses. The tumor involved the end organ of the 10% who had recruitment. In all of the patients caloric responses were abnormal, using 30° C. and 44° C. irrigations(52).

The natural history of 108 neuroblastomas varied greatly with tendency to hemorrhage and variable malignancy in different parts of the same tumor. Fifteen, most starting before two years; have survived 5 to 18 years(45).

Of 5,778 patients with malignant lymphomas, 795 had neurologic complications(49). Nitrogen mustards followed by x-ray was the treatment of choice for spinal lesions. Laminectomy should be done only for compression fracture. Although 90% of lymphoma patients and 50% of leukemic patients had cerebral symptoms, only 11 patients had intracranial tumor, all but one by extension. Ninety percent of the local involvement of cranial and peripheral nerves was by malignant lymphoma and half improved with radiation. Infections of

the central nervous system seemed related to lowered immunity, and all those with exotic infections died. Herpes zoster, in 162 patients, was not helped by radiation of the spine. Intracerebral hemorrhage occurred in 146 patients. Although vessel walls may be invaded in crises, bleeding was usually the result of thrombocytopenia so that iatrogenic marrow depression must be avoided.

Meningeal leukemia of high morbidity seems related to poor penetration of the blood brain barrier by the drugs and is apt to occur during a hematologic remission (48, 62, 198). It occurred in 25 of 150 patients with acute leukemia. Steroids and radiation of the skull benefited 75 percent. The danger of marrow depression prevents radiation of the spine, but intrathecal methotrexate produces a 4 to 6 weeks remission.

Of 33 patients with Hodgkins disease, the 13 who had pain after drinking alcohol had more eosinophils and more often had spontaneous pain, mediastinal involvement and leucocytosis (93). Eosinophil infiltration of a squamous carcinoma of the cervix was associated with alcohol induced pain (86).

Cerebral angiomas so increased venous pressure that compression of the jugular veins low in the neck caused rapid, prominent, usually ipsilateral swelling of the vein in all but one of 17 children (221). A bruit was audible over two of three spinal angiomas of children (141).

Five of 8 patients with symmetrical peripheral sensory-motor neuropathy associated with myeloma or malignant lymphoma had numerous metastases infiltrating the nerves (13).

In 363 consecutive cases of carcinoma of the lung, the brain was examined in 338, and 38 percent had intracranial involvement (81). The cell type was not related to frequency of intracranial metastasis.

The effect of various intensities of gamma radiation on the brain have been measured in terms of time to cause EEG abnormality (217).

Tumor cells were found in the cerebrospinal fluid of 12 of 64 patients with histologically verified tumors, and in 8 were the first proof of metastasis (11). Marks and Marrack (137, 138) suspend the sedimented cells from the cerebrospinal fluid in 3 or 4 microliters of bovine albumin and 1 per-

cent EDTA. The suspension is smeared on cover slips as for a blood smear and stained with Leishman's. The abnormal cells tend to be large and occasionally syncytial. The nuclei are large, sometimes multiple or mototic, or have large nucleoli.

BASAL GANGLIA DISEASE

Opisthotonus, torsion spasms, oculogyric crises, trismus, other painful muscle spasms and akathisia continue to be reported not only from dimethyl and piperazine derivatives of phenothiazine, but also reserpine and deanol (31, 66, 110, 200, 220). They may occur when the drug is started or the dose increased, or may be precipitated by an acute infection or dehydration. The phenothiazines produce a purple-brown color when 1 ml. of 10% ferric chloride and 1% hydrochloric acid is added to 3 ml. of the patient's urine. Mild cases responded to barbiturates. Severe cases may require parental caffeine or diphenhydramine (Benadryl).

Most of 40 patients with basal ganglia diseases had increased urinary catechol amines (12).

Parkinson patients with abnormal EEG's have a poorer prognosis for surgical treatment (58). Five hundred chemothalamotomies by Cooper (37) produced enduring relief of tremor and rigidity in 85% and oculogyric crises were ameliorated. Below age 65, he would wait to operate until ability to earn a living is threatened. Mental deterioration, psychosis and pseudobulbar palsy are absolute contraindications. Physiological old age and advanced medical disease are relative contraindications. Mortality was 2.4%. Paralysis was permanent in 3%, transient in 6% and other transient symptoms occurred in 10%. Similar observations are made regarding thermal lesions (212). A case is reported where the ventral medial globus pallidus has been destroyed without effect on Parkinsonism, but the chemical had passed along the anterior commissure to cause necrosis on the other side (226). The psychologic effects of stereotactic lesions are non-specific and not related to the area coagulated (155).

Essential tremor of 210 patients stemmed from 9 ancestors (115). The onset was usually at 50 years (10 to 70 years). Onset and

progress varied in the same family. The tremor was sometimes greater in one limb. Seventeen patients had some rigidity.

Twenty-four cases of tremor are now reported from New Guinea, 170 miles from the Kuru area(228). There are associated pyramidal, extrapyramidal or cerebellar symptoms.

MULTIPLE SCLEROSIS

In a review, Schumacher(194) reports a higher than chance incidence in relatives. Although fewer cases start in warm climates, climate does not affect the course. Average life expectancy is 21 years. There are more recurrences and shorter survival with late onset. A case that is mild for the first five years is apt to remain mild. Of patients ambulatory when first seen, 40% are still ambulatory 15 years later, 25% are helpless and 33% are dead. The best treatment is supporting and sympathetic, avoiding fatigue in the active stage(112).

Careful culturing of spinal fluid for 2 to 6 months was negative for spirochetes(142). Infrared spectrophotometry of serum lipid in Multiple Sclerosis was normal(65). Electrophoretic partitioning of cerebrospinal fluid and serum proteins of 23 Multiple Sclerosis patients was normal except in six patients with a short course and abnormal gold sol who had increased gamma globulin and decreased albumin in the cerebrospinal fluid(29).

Cooper reports relief of cerebellar tremor by chemothalamotomy in 10 of 90 patients (38).

OTHER CENTRAL

NERVOUS SYSTEM DISEASE

Victor, *et al.*(219) describes 50 alcoholic patients with an apparently malnutrition syndrome of gradually increasing ataxia, most conspicuous in the legs. A degeneration of the cerebellar cortex of the anterior vermis and hemispheres is best demonstrated on sagittal section. The olives and less consistently the medial cerebellar and the vestibular nuclei may be affected.

Carbon monoxide may be demonstrated for up to 3 weeks after chronic poisoning due to binding with other tissues(71).

Narcoleptic patients may have a partial Pickwickian Syndrome(202).

Magnesium deficiency may cause depression, irritability, ataxia, weakness, convulsions, low voltage ECG and focal EEG slowing(83).

Calcium EDTA is the best treatment for lead intoxication, but it must be used cautiously in children who may need cerebral decompression by craniotomy or intravenous urea(225).

Fifty cases are now known of progressive ataxia of infancy and early childhood with telangiectasea of the conjunctivae and skin of ear and nose(195).

Retinitis pigmentosa and congenital deafness seem to be different manifestations of the same gene and many patients have labyrinthine disorder and mental deficiency(82).

In Hurler's disease, but not in normal relatives, reticuloendothelial cells are found to contain inclusion bodies with a central zone staining as a mucopolysaccharide and a peripheral unstained zone(96).

In Gaucher's disease, the increased serum acid phosphatase seems to be distinctive in its reaction and so may be of diagnostic value(215). The defect of cerebroside formation appears to be catabolic(216).

At autopsy a patient with congenital universal insensitivity to pain had no abnormality of structures concerned with pain(14).

Despite digitation of the skull on x-ray, 37 cases of craniostenosis were asymptomatic and mentally normal. Papilloedema and optic atrophy are absolute indications for craniotomy(76).

Surgery may arrest the progression of symptoms of spinal dysraphism(94). The "split notocord syndrome" of developmental posterior enteric remnants may have associated visceral abnormalities of the chest and abdomen(16).

Convulsions during the first days of life of 374 patients were the result of major brain pathology. Those with subdural hematoma were often precipitated by external stimuli and preceded by vomiting. Cold often caused convulsions, but there were no febrile convulsions in the group, nor in children with fevers as high as 108°F.(40).

Toxemia of pregnancy, prolonged labor or anoxia at birth did not result in more convulsions in 762 at age 10 to 14 than in controls(102).

Birth trauma to the vertebral arteries

may cause ischemic changes of the brain stem important in cerebral palsy(232). Difficult breech delivery or vertex delivery with the arm over the head may injure the spine at the cervico-thoracic junction with non-progressive motor and sensory signs to this level, but not necessarily mental retardation(121).

Cervical discs compressing the cord-like tumors, may require operation, but with lesser lesions, or when the diagnosis is in doubt, patients are better given a three-month trial with a Minerva Collar(32). Cinoradiography confirms the inadequacy of other collars(99).

Lumbar discs, when they cause loss of bowel or bladder control require urgent surgery(199).

Serum transaminase is too insensitive and nonspecific to be useful in diagnosis of neurological diseases(213).

CRANIAL AND PERIPHERAL NERVES

One in 25 chronic alcoholics with peripheral neuropathy gradually develops blurred vision, a central or centrocecal scotoma and usually pallor of the disc. The papillomacular bundle degenerates in the optic nerve, chiasm and tract. Most improve on food and B vitamins, but the exact nutrient responsible is not known(220). A similar lesion is reported in B₁₂ deficiency(59).

Retinal hemorrhages are common in megaloblastic anemia, but rare in normocytic anemia, suggesting that anemia is not alone the cause(39). Retinal exudates and hemorrhages after massive gastrointestinal bleeding are related to the brief fall in blood pressure, not the anemia. Focal anoxia of the retina may be the cause(165).

Glew(73) reviewing observations on papilloedema proposes that it is due to optic nerve edema associated with cerebral edema.

When a child suddenly develops a central scotoma pneumoencephalography may be needed to exclude tumor. But for optic neuritis, no treatment is helpful. Fifteen of 19 recovered completely(103).

Complete congruity of visual fields following 24 temporal lobectomies suggests that incongruity in cases of tumor may be due to pressure on the optic tract. The fibers looping most anteriorly represent the part

of the field nearest to the upper vertical meridian(223).

Vertical eye movements are mediated by bilateral parmedian pathways just ventral to the median longitudinal fasciculi(15).

Diabetes and Multiple Sclerosis each account for one-sixth of abducens paralyses. They clear in an average of 3 months, independent of treatment. One-tenth are due to syphilis and without prompt penicillin therapy, they are permanent(201).

Nystagmus of labyrinthine origin (motion sickness) is suppressed by antihistaminics, but not hyposcine, largactil or nembutal(100). In appraising positional nystagmus, the patient's head must be turned far to either side and hyperextended(191).

In a controlled study, potassium and sodium was found to have no relation to Meniere's attacks(75). Nicotinic acid kept 48 patients free of relapses for 3 to 6 years.

Strict criteria for diagnosis of Guillain-Barre Syndrome are outlined by Osler and Sidell(160). If symptoms were still progressing, steroid therapy may help(134).

Even if the whole area of pain is not anaesthetized, the pain from a more proximal lesion is relieved longer than the duration of the nerve block(104). Cooling with ethyl chloride or freon is an effective counter-irritant to relieve some post herpetic neuralgias(213).

Pilocarpine was the only beneficial treatment of the tricesylphosphate myeloneuritis of Morocco(70).

The amount of hypertonus and spasm are more reliable guides to the severity of tetanus than the duration of the latent period. Tracheostomy, curarization and artificial respiration are advisable in severe cases. A toxic myocarditis as in diphtheria is apt to cause fatal hypotension(2).

Polyneuropathy in rheumatoid arthritis carries a serious prognosis. It is not always related to steroid therapy. There is no effective treatment(85, 209).

Peripheral entrapment neuropathies of the lower extremities have been reviewed by Kopell and Thompson(108).

MUSCLE

Myasthenia Gravis has been reported in one of monozygotic twins(3). The abnormally long and multiple endings at the

motor end plate in myasthenia described by Coers have been confirmed (19, 133). Electronmicroscopy of the myoneural junction disclosed seven layers of pores, perhaps for released acetylcholine (20).

Most of 65 myasthenic patients reach their maximum requirement of medicines in the first year (167). Instillation of cholinergic drugs in the conjunctival sac lessens ptosis and diplopia in a few patients without ill effects (120). The ganglionic blockade by monoamine oxidase inhibitors is discussed by Gertner (69). A new oxime has an additional atropine-like action (125).

Kreel, *et al.* report that thymomas are three times as apt to be malignant in myasthenics as in non-myasthenics. X-ray treatment before thymectomy tends to make control more brittle. Pre-operative tracheotomy is advisable and the patient should be carried on the minimum of medication to cover respiratory needs and so avoid cholinergic crises.

We really need a method for estimating intra-muscular electrolytes to determine whether muscle membrane permeability is altered in myotonia (163). Lowered serum potassium is not effective in control of myotonia (124). Hyperostotic changes were noted in the skull of many patients with myotonic dystrophy (35).

The weakness of progressive muscular dystrophy is apt to cause a hypoventilation syndrome (105). Cardiac involvement is not related to the severity of the skeletal muscle disease (92). In pseudohypertrophic muscular dystrophy, the first changes are vacuolization of the sarcoplasmic reticulum (118). In the hereditary dystrophy of mice, breakdown begins in the myofilaments (183) and labelled glycine studies indicate an accelerated turnover of muscle proteins (113). In a controlled study of 33 muscular dystrophy patients, Vitamin E had no effect (17).

CLINICAL EXAMINATION

Meyer and Barron (149) have shown that Brun's "frontal ataxia" is really frontal lobe apraxia. There is apraxia of all leg movements, particularly bilateral movements. There is rigidity, gegenhalten and difficulty initiating movements. Hypokinesia and bradykinesia may even reach catatonia. Not

all have foot grasp. (There is not the sensory loss of parietal apraxia.)

Somatic sense of depth of space is distinct from touch and surface space perception, and appears to be a parietal lobe function (175).

Tapping the flexed index finger on the thumb at the interphalangeal joint as quickly and precisely as possible is a helpful test of coordination (63).

In non-diabetic patients, the reinforced deep reflexes of the legs are absent in one percent of patients over or under 60 years old (56).

An elaborate electromyographic study indicates that the Babinski sign is the result of encroachment of the receptive field of the normal flexion reflex on that of the normal extension reflex (114).

Cortical lesions causing a positive optokinetic response are parietal (206).

CEREBROSPINAL FLUID

On electrophoretic fractionation of cerebrospinal fluid gamma globulins (serum proteins were normal) in Multiple Sclerosis and Neurosyphilis, the increase was mainly in gamma 1, 2 and 3. In subacute sclerosing encephalitis, it was mainly in gamma 4 and 5 (129).

Only prolonged elevation of blood sugar affected cerebrospinal fluid glucose levels (136). The disappearance of sugar from cerebrospinal fluid in meningitis appears due to the increased phagocytic activity of the white blood cells (168).

Yellowing of the cerebrospinal fluid is not diagnostic of the cause of the patient's jaundice, except that with pleocytosis it suggests leptospirosis (181).

PROCEDURES

Phenol myelography can relieve spasticity, but damage to sacral roots paralyses the sphincters and dorsal root damage leads to decubiti. It should not be used in active Multiple Sclerosis and only circumspectly in ambulatory patients (127, 157).

Spinal complications or aortography are due to arterial access of dye to the cord parenchyma. They are avoided by using the prone position, avoiding barbiturates and using small injections of Hypaque (206).

Five hundred cerebral angiographies

with Hypaque at Mt. Sinai Hospital caused only 6 percent complications(205). At the Mayo Clinic(9) 9 percent had permanent and 11 percent transient complications.

Motor nerve conduction velocity is normal in polio but lowered 40 percent in poly-neuropathy(97).

The urinary tract can be kept sterile by strict aseptic care of the drainage system (51, 151).

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ALCOHOLISM

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Jellinek(3) considers that there is a physiological dependence in alcoholism similar to that found in morphine addiction and in barbiturate addiction and that the convulsions of the alcoholic are commonly brought about by withdrawal of alcohol. He feels that further study of the evidence on both sides should be carried out but concludes, "The alcohol withdrawal syndrome is so well documented that its existence can hardly be denied and under certain conditions . . . it may culminate in delirium tremens."

Krystal(4) in a study of 700 patients with delirium tremens made careful physiological studies including the electrolyte levels in the blood serum, such as sodium, chlorides, potassium, and magnesium. He felt that one of the important precipitating factors in delirium tremens was the withdrawal of alcohol which was relieving the patient's anxiety and depression. He felt that delirium tremens was a syndrome caused by the following factors : (1) water deficiency, (2) salt deficiency, (3) magnesium deficiency, (4) inability to wall off invading organisms, (5) brain swelling, and (6) the pharmacothymic crisis.

Friedhoff and Zitrin (2) compared two groups of cases of delirium tremens. Both groups received vitamins, intravenous fluids, and where necessary, antibiotics. Group I received chlorpromazine and group II received paraldehyde. The symptoms subsided on an average of 8 days for group I and 6 days for group II. It was concluded that paraldehyde appeared responsible for the more rapid recovery in group II. Chlorpromazine was felt to be valuable in abolishing nausea and vomiting.

A Norwegian study of delirium tremens

(6) found that there were increased blood serum levels of glutamic oxalacetic transaminase (GOT) and ornithine carbamyl transferase (OCT) and felt that this was due to liver pathology. However, the authors felt that increased GOT and OCT could not be considered as the main cause of delirium tremens since some of their cases did not show increase of these two substances.

A long French article(5) entitled "Injectable meprobamate; effective treatment of states of acute alcoholic delirium" reported the previous high mortality rate in delirium tremens and its decrease in 1958-59 to one-fifth of what it had been in 1951. After experimenting with various drugs and finding chlorpromazine and reserpine unsatisfactory, the authors tried meprobamate and found it most satisfactory. It is noteworthy that the authors in addition to meprobamate by intramuscular injection used vitamin B-1 and B-12 and strychnine and intravenous 25% alcohol in glucose solution in gradually reduced amounts. Barbiturates were not given. There were no fatalities in the 83 cases treated and the condition cleared up in 3 days in all but one of the cases. The authors state that under this treatment restraint was not necessary. Isolation, however, was employed and good nursing care and constant observation of the patient was emphasized as an important factor in recovery.

A number of other reports stress the authors' opinions upon specific drugs in the treatment of acute alcoholism and delirium tremens. Orland and Camden(9) used triflupromazine hydrochloride in the treatment of acute alcoholics in a county or city prison. They found that 212 of 252 prisoners treated by the oral administration of 25 mg. of the drug every 4 hours, and in some

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cases running the total dosage up to 400 mg. in 24 hours, showed marked improvement. Forty patients showed no improvement or their symptoms became worse.

Baroody(1) reports the use of trifluoperazine (Stelazine) in 23 cases of delirium tremens and felt that it was of value. He stated that further studies were needed to determine how valuable this drug is. Since these cases were given chlorpromazine or promazine intravenously in the beginning and received fluids, glucose, vitamins, magnesium, diuretics, tranquilizers and steroids, the role of trifluoperazine is as yet undetermined.

Much has been written about the effect of tranquilizing drugs in potentiating the effect of alcohol. Meprobamate, although a hypnotic and not a tranquilizer, has been shown to potentiate the effect of alcohol. Recently a study(12) was made on the effect of paraldehyde. Albino male mice given alcohol and then an hour later given paraldehyde showed a marked increase in the toxic effect of alcohol. The authors question whether it is safe to give paraldehyde to individuals under the influence of alcohol.

A recent study(10) of patients given an intravenous injection of amino acids concludes that amino acids accelerate the rate of alcohol disappearance in the blood.

Miller and Dvorak(7) report a method of group conditioning in which 4 patients were simultaneously conditioned to aversion to alcohol. They concluded that group conditioning is not only possible but has certain advantages over individual conditioning.

Minto and Roberts(8) report experimental work and prolonged use of Temposil in 27 patients and compare its use with that of disulfiram. Temposil does not produce the unpleasant side effects seen with disulfiram, and so patients will take it more regularly. When alcohol is taken within 24 hours of having taken Temposil, an acetaldehyde reaction occurs within 15 minutes. All patients in this series showed some degree of this reaction, whereas alcohol-disulfiram reactions are less predictable. The Temposil reactions are less severe than those with disulfiram, and they can be rapidly minimized by intravenous injection of an antihistamine, whereas disulfiram reactions are not easily modified. Patients(6) who took alcohol

within 24 hours of taking Temposil could reduce the intensity of the symptoms by walking about briskly. Only 1 patient in the series could not have walked thus about because of the severe reaction. Temposil's main disadvantage is the increased desire to drink in the early stages of alcohol-Temposil reactions, but this can be overcome by close observation of the test reactions before beginning long-term use. The data showed that 100 mg. of Temposil are better than the 50 mg. suggested by other workers.

Scott(11) in a study of 122 male alcoholics and 21 female alcoholics, all of whom were divorced, concluded from the patients' discussions of their sex lives that sexual immaturity, not homosexuality, is the basic characteristic of the alcoholic. The alcoholic, although actively heterosexual, cannot take on the responsibility of a permanent relationship.

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GERIATRICS

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The results of a 3-year survey, carried out by the New York State Department of Mental Hygiene, of over 2,000 persons past age 64 in New York City old age homes, nursing homes and state hospitals, have indicated that 88% of those in nursing homes and 94% of those in state hospitals had chronic brain syndrome of some degree (11). The severe form predominated in state hospital patients, of whom 89% (many doubtless had improved since admission) were still eligible for certification. These data belie claims of "overuse or abuse of state hospitals, on either medical or moral grounds, through the unwarranted admission or retention of aged patients."

A 2-year study (1957-59) of 191 Saskatchewan geriatric patients, 137 admitted to a mental hospital, 54 to a general hospital psychiatric unit, showed the disproportionate number of senile and physically ill persons in the state hospital admissions, of whom only 62 (45%) improved enough to warrant discharge compared with 53 (98%) of the general hospital group. At the 1959 follow-up, 53 (39%) of the mental hospital, compared with 9 (16%) of the general hospital group had died. Thus even with vigorous care, mental hospital patients with physical disease died more precipitously than did their fellow patients in a hospital more suited to general treatment (16).

In the Geriatric Research Project at Langley Porter Neuropsychiatric Institute, psychiatrists and social scientists have reported on 534 patients aged 60 and above, first-time admissions in 1959 to the psychiatric ward of San Francisco's city-county general hospital, of whom two-thirds were placed in state mental hospitals. This group was compared with another group of 600 men-

tally healthy persons living in the community, matched as to age, sex and living arrangements. According to preliminary analyses, average mental ability of the group showed a progressive decline in the hospital group from age 60 (the earliest age measured), whereas no such decline was seen until age 75 in the community group. In the hospital group 62%, compared with 33% in the community group, had incomes of only \$1500 or less. Most striking, in the hospital group, was the high incidence of serious physical illness; 70% required daily care just for physical disability, and, in more than 40%, admission to the psychiatric ward had been precipitated by acute behavioral disturbances in response to acute physiologic disorders. As a group the 534 hospital patients were seriously ill psychologically or physically—more often both.

Institutes and divisions of gerontology have been set up in recent years in 16 universities, some of them with research programs.

In a long and interesting report from England, Roth (13) has discussed the high proportion of somatic illness in geriatric mental patients as a whole.

Blain (2) reported to a group of general medical practitioners on an American Psychiatric Association survey of 3,500 professional persons, many of whom stressed that doctors need to treat the aged as intelligent human beings, to understand psychological medicine, to be aware of the patient's financial problems, and to refer him when necessary to social agencies.

From his extensive survey of mental health research, Deutsch (6) has noted that the use of open wards and new drugs has helped reduce the total state hospital population for 3 years, 1955-58; but this reduc-

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tion, though significant in the face of an increased general population, amounted to less than 1% in 1958.

Recommendations of various new drugs continue. Wayne(17) considers analeptics as sometimes of value; their essential ingredients, metrazol and nicotinic acid, are aimed at increasing blood supply and oxygenation. In depressions of the aged, electroconvulsive therapy effects prompt symptomatic relief. Tranquilizers, properly used, may decrease the aged patient's anxiety and agitation, but their excessive use may deprive him of the self-realization still possible. The dosage should commonly be reduced as time goes on, according to Howell(12); in many cases the use of tranquilizers has masked serious underlying diseases. Sanen(14) warns that tranquilizers may increase the difficulty of evaluating the clinical symptoms of ischemic heart disease in senile and psychotic patients. A British report(8) rates ischemic heart disease as the second most disabling disease in men over age 70.

The amount of hormone released by the thyroid gland, though it decreases with age, remains constant in the blood; and the giving of thyroid substance to the aged does not make them spry, but only nervous and trembly; hence the lethargy of the aged is not due to hypothyroidism(10).

The preliminary results of a study of intensive psychotherapy for a 9-month period with 12 patients aged 75 to 95 were encouraging, even in those with evidence of organic changes(4).

Dr. Anna Aslan in various reports(1) on procaine therapy (a 2% procaine solution, with a Ph of 3.3 to 4, called H₃), first given to 189 aged institutionalized persons in 8 to 9 monthly courses with interim rest periods, claims to prolong life and to relieve many disorders, from arthritis to failing memory. Its use as a prophylaxis is now being investigated. Several authorities have strongly questioned these claims; Droller(7) considering the evidence inconclusive, and both Freeman and Insley(9) expressing doubt of the drug's efficacy. The Swiss investigator, Verzar(15), has found no differences in life-time, general appearance and biological age of certain fibers between rats treated 14 to 30 months with large doses of pro-

caine and untreated rats from the same litters; but these experiments "do not preclude a possible stimulating influence of procaine in humans." A Russian, Dr. J. F. Zhordaniya(19) reported that the revascularizing of a senile dog's ovaries restored fertility in 25 enfeebled and aged dogs, though no attempt was made to breed them. The experiment was called a step in the direction of prolonging life.

Bourlière(3) includes in a report on gerontological activities in France a study on the duration of sleep in 380 healthy persons, aged 30 to 80: the average value was 7 hours, 20 minutes; the duration remained remarkably constant throughout life for those not regularly using a narcotic, and was little affected by the subject's sex and intellectual background. A study of attitudes toward retirement in 264 white collar and manual workers gave poor health and fatigue as main reasons for stopping work in half the group; hence a postponed age of retirement would not greatly increase the economic benefits. Van Zonneveld(20) reports that about a third of Dutch men aged 65 are still at work, and some employers offer part-time work to pensioners. Italy early in 1960 held its first examinations for a university degree in gerontology and geriatrics.

Williams(18) from tests of 100 British persons past age 65 would assess a wide variety of abilities, emphasizing individual test performances and not the total score. Clark(5) has concluded, in a series of physiological and psychological measures of 102 subjects aged 20 to 70 that, "at the level of this analysis, aging occurs along a single dimension, measured best by blood pressure, lens accommodation and sound threshold and less well by ability and speed tests."

Tests of a cross section of 250 elderly persons in the Duke University geriatric study have indicated that in a person aged 60, with an IQ of 116 or above, mental ability drops very slightly with aging; with an IQ of 86-116, it declines gradually and moderately; with an IQ of 85 or less, it drops markedly.

The American Association for the Advancement of Science held a symposium on aging late in 1959. *Handbook of Aging and the Individual*, edited by J. E. Birren, 1959,

is a comprehensive survey of recent research and other information on aging. R. S. de Ropp's *Man Against Aging*, 1960, is a competent review of the topic for the layman.

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EPILEPSY

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PHYSIOLOGY AND BIOCHEMISTRY

"Isolated" cortex became hypersensitive to acetylcholine(1) (the suggestion that followed was that just such a partial isolation of the cortex secondary to trauma, tumor, *etc.*, may be an important factor in the production of seizures). Stimulation of the posterior hypothalamus decreased cortical seizure threshold(2) and stimulation, particularly of the rhinencephalon, produced seizure activity in the hypothalamus(3). Various "autonomic" responses were obtained by stimulation of human anterior cingulate area(4) but they were so rare and inconstant that the authors questioned whether they represented "normal" functions of this area; in the monkey, epileptic foci in the amygdala produced a different type of seizure (convulsions of limbs and trunk, head turning away from the lesion) than foci in the hippocampus ("twitching" of the upper lip, head turning to side of lesion)(5). Based on clinical material, ictal depression was more frequently associated with diffuse temporal lesions whereas ictal fear was more frequently associated with

temporal cortical lesions(6), particularly on the left(7); seizures arising from medial and superior border of the cerebral hemispheres frequently produced auras of visceral, genital or anal sensation, postural movements, and sensory or motor phenomena of the lower extremity(8). Of considerable interest were the different types of responses obtained in monkeys by electrical self-stimulation of implanted electrodes(9): self-stimulation of the anterior thalamus produced an increase in self-stimulation and then spike-wave activity in the septal region, self-stimulation of the posterior hippocampus produced a seizure burst and then increased self-stimulation, and self-stimulation of the amygdala produced rapid self-stimulation until a seizure burst occurred to be followed by prolonged absence of self-stimulation.

Among the biochemical studies published last year, some were: experimental focal seizures are associated with an immediate decrease in the epileptogenic area of glutamic acid, glutamine and glutathione but no significant change in gamma-aminobutyric acid (GABA)(10); increase potassium or decrease calcium concentration in-

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creased GABA in vitro(11) while ammonium hydroxide increased GABA in vivo(12, 13); a mirror focus to an experimental epileptic focus had a decrease in the blood-brain-barrier to GABA(14); and GABA action is probably not merely a simple blockade of excitatory activity(15, 16, 17). In contrast to the concept that "all seizures are one"(18), Stone, *et al.*(19) review showed how a number of different convulsants have different basic physiological or metabolic actions.

SYSTEMIC CHANGES

ASSOCIATED WITH SEIZURES

Cerebrospinal fluid (c.s.f.) glycoproteins have been reported as normal in epileptics(20) or as normal in "genuine" epilepsy but increased in post-traumatic epilepsy(21); the transaminase was variously reported as elevated in patients with grand mal epilepsy(22) transiently increased after a generalized convulsion(23, 24) and increased with seizure activity(25); c.s.f. gamma-globulin was found normal in patients with petit mal but slightly elevated in patients with grand mal(26); c.s.f. malic dehydrogenase was lowered but not significantly in patients with seizures(27). A seizure or series of seizures increased c.s.f. ammonia(28), decreased serum-c.s.f. barrier to protein(29), produced a significant transient increase in a "bradykinin-like hypotensive polypeptide" in the brain(30), transiently increased and then transiently depressed protein-bound iodine(31), increased plasma catechol amine concentration if the seizures were not modified by succinylcholine(32), produced no change in brain amine oxidase content(33), produced ventricular dilatation as seen on pneumoencephalography(34), and altered specific areas of the adrenal cortex(35, 36). A convulsion may produce a significant myoglobinuria(37). The serum of epileptics was more toxic to experimental animals than that of controls(38, 39, 40, 41). Metastases from experimental cancer in rabbits were increased by electric convulsive therapy(42).

ETIOLOGY

Incidence of seizures in patients with various conditions was reported as: 42%(43) or 28%(44) after head injury, 95%

with cerebral paragonimiasis(45), 44% with microcephaly(46), 6% with progressive muscular atrophy, 29% with Oppenheim's disease, and 6% with myasthenia gravis(47), 27% of idiots and imbeciles(48), 30% of children with chronic lead poisoning(49), 13% of children with central nervous system lupus erythematosus(50), 50% with cerebral sequelae of air embolism(51), and 5% of psychotics admitted to Peking Mental Psychopathic Hospital(52) or 6% of an English mental hospital population(53). Focal seizures may occur 2 to 4 years after recovery from tuberculous meningitis(54). A study of 15 cases of seizures occurring during influenza suggested that the infection may precipitate convulsions in susceptible individuals but that the effect of the infection is only temporary(55). Ten out of 88 patients who had temporal lobectomies for psychomotor seizures were found to have congenital cerebral arteriovenous malformations(56); tumors accounted for 57% of the small focal lesions found in the temporal lobe after lobectomy for psychomotor epilepsy(57). The first symptoms of a glioblastoma were either focal or generalized seizures in 9% of patients and, on the average, these seizures preceded the hospital admission for the tumor by a period of about 1 year(58); seizures of late onset were a symptom of a brain tumor in 22%(59) or 19%(60) or rarely(61); in children up to 15 years of age, seizures were frequent with supratentorial, slow growing tumors(62); 89% of cases with seizures beginning in the foot had brain tumors(63). Muscle biopsies from 30 epileptic children revealed angiitis of small and medium calibre vessels in 7 cases(64); convulsions were part of the symptomatology in 4 out of 7 cases with noninfectious granulomatous angiitis(65). Among the less common causes of seizures that were reported were: Hypaque cerebral angiography(66), low G tolerance(67), pyridoxine dependency(68), scleroderma(69), folic acid given for the megaloblastic anemia due to phenobarbital(70), and poliomyelitis vaccination(71). There was a positive family history of convulsions in 15% and a positive past history of convulsions in 11% of a large group of patients with migraine(72). Kellaway and Druckman(73) suggested that all cases of "breath-holding"

seizures and episodes of unconsciousness associated with noxious stimuli are due to reflex cardiac arrest.

CLINICAL ASPECTS OF SEIZURES

Hunter(74) presented an historical review of status epilepticus; he suggested that the increase incidence of status is largely related to the use of active anticonvulsant drugs. Further series of patients with headache and/or abdominal pain as a form of epilepsy have been reported(75-82); these may respond quite well to anticonvulsive medication. Nystagmus may be a part of a petit mal seizure(83). The subject of epilepsy *cursiva* (running seizures) was discussed(84); the running may be preictal, ictal, or postictal. Two more cases of muscogenic epilepsy with temporal lobe foci were reported(85, 86). There were two reports concerning reading epilepsy(87, 88); Critchley, *et al.*(87) suggested 5 different mechanisms that may produce this syndrome: (a) pattern vision akin to photic stimulation, (b) repetitive proprioceptive impulses from the eye muscles and possibly the lips, *etc.*, (c) attention to reading with exclusion of awareness of environment, (d) emotional reaction to subject matter and (e) conditioned response to the circumstances of reading. Television has been indicated as the precipitating factor of seizures in several cases(89, 90). Ionasescu(91) reported some interesting cases of paroxysmal disorders of body image; where the focus was in the parietal lobe rather than the temporal lobe, there was more likely to be involvement only of the extremities. Anastaspoulos, *et al.*(92) presented 3 female patients with temporal lobe seizures and endocrinopathy. There was an interesting report of 3 siblings all of whom had seizures in utero as well as in neonatal life(93).

PSYCHOLOGICAL AND SOCIOLOGICAL

Psychological tests found that patients with "nonfocal (centrencephalic)" epilepsy did more poorly on tests of attention than patients with focal (temporal and frontal) epilepsy and patients with bilateral, independent (EEG) temporal foci had somewhat lower memory quotient than those with a unilateral temporal foci(94). Chil-

dren with an organic convulsive disorder showed greater variation in psychological subtest scores and a greater decrease in verbal I.Q. when retested than did children with a nonconvulsive organic disorder; normal children had higher I.Q.'s on initial tests and greater variation between verbal and performance I.Q. than was found in the other two groups(95). Lesions in the dominant temporal lobe were accompanied by difficulties in verbal recall while lesions in the nondominant temporal lobe were accompanied by impairment in comprehension of pictures; ablation of the temporal lobes for seizures accentuated these defects(96). Psychotic episodes associated with seizures were: (a) coincident with the seizure, *e.g.*, during "petit mal status," (b) during the postictal state, or, (c) in the case of temporal lobe foci, manifestations of "pre-seizure or subseizure excitation in the parahinal structures"(97). Goldie and Green(98) presented an interesting patient whose seizures could be provoked by rubbing his face; suggestion under hypnosis or anticipation of stimulation could produce the same effect, *i.e.*, the psychological stimulus was just as effective as the actual rubbing. Flynn and Wasman(99) demonstrated that hippocampal discharge did not interfere with "learning." Several studies of the socio-economic effects of epilepsy suggested that factors other than the seizures per se were often very important in the patient's apparent lack of adjustment(100, 101). Caviness(102) presented the interesting results of a Gallup poll showing the improving attitude of the public toward epilepsy over a ten year period.

THERAPY

Koch and Woodbury(103) suggested that Dilantin increased the neuron's "sodium pump" in contrast to Diamox's decreasing the permeability to sodium so that both drugs may end up with a decreased intracellular sodium and increased intracellular potassium but they did so by different mechanisms. Strobos and Spudis(104) reported that Dilantin influenced the seizure threshold but not the spread of a seizure while phenobarbital acted by limiting the duration and spread of seizure with but little effect on the threshold; on the other

hand, both Dilantin and phenobarbital but not Tridione were reported to decrease electrically induced cortical seizures(105). Studies were reported on: Mysoline(106, 107), Phenurone(108, 109), Elipten(110, 111, 112), carbonic anhydrase inhibitors(107, 113-118), several succinamides(119-122), meprobamate(123, 124), phenothiazines(125, 126), Mesantoin(127, 128), Xylocain(129, 130, 131, 132, 133, 134), quinidine(135, 136), two Indian plants (Jatamansone(137) and acorus calamus linn(138)), Ro 1-8294 (4-phenyl-4-methylpyrrolidione)(139), 2-ethyl-cis-crotonylurea(140), alpha-amino-gamma-diphenylhydantoxylvaleric acid(141), neopentylallyl barbituric acid(142), several urazole derivatives(143, 144), Ethotoin(145), Posedrin(146) and Meratran(147). Buchtal and Svensmark(148) reported some interesting studies on the relation of blood levels of Dilantin and phenobarbital to their clinical effects. Experience with parental Dilantin was presented(149). ACTH was of value in the treatment of hypsarrhythmia(150, 151, 152, 153) and in some other cases of infantile epilepsy(154). Millichap(155, 156, 157) discussed the treatment of febrile seizures and offered Pyricital as an effective agent. The additive effects of Dilantin plus several other active convulsants were discussed(158).

Dilantin was incriminated as the cause of a reversible paraparesis in a patient(159), lung changes akin to gingival hyperplasia(160) and a severe hemorrhage in a hemophiliac with gingival hyperplasia(161). Experimental Tridione nephrosis(162) and two further cases of Tridione nephrosis in humans were reported(163). Peterkin(164) listed the numerous types of skin eruptions associated with barbiturates and hydantoins. Further cases of megaloblastic anemia(70, 165-168) or aplastic anemia(169) due to anticonvulsant drugs were reported.

In regard to surgical treatment, good results were obtained in psychomotor epileptics by unilateral temporal lobectomy in: 2/3 of patients who did not have tumors(170), in 32% with bilateral temporal foci but with predominance on one side and in 10% with bilateral and about equal temporal foci(171). Epileptic foci were destroyed by

the injection into them of radio-active gold or yttrium(172); specially placed subcortical lesions were reported to help some patients with petit mal(173); treatment by pneumoencephalography was reported to produce a failure to improve in only 7 out of 31 epileptics(174).

Under the heading of miscellaneous reports might be included: (a) Murphy's paper(175) that related the basis for the adoption of 19 different saints as patrons for epileptics and (b) various studies on prognosis, *e.g.*, good with mid-temporal foci(176), when focal or temporal lobe seizures start in early childhood, when centrencephalic seizures start between the ages of 5 and 9 and when the EEG is normal(177) and better for medicinal treatment when the EEG has bilateral synchronous abnormalities, seizures start after the age of 1, and when there was not a definite organic etiology nor neurological signs(178).

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PSYCHIATRIC SOCIAL WORK

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During the past year the demand for psychiatric social workers continued to grow. Due to the increased tempo of research on mental health problems, there has been a clearly observed trend to recruit workers who are competent in research as well as treatment. Pilot studies and demonstrations to improve methods and techniques for treatment and rehabilitation of the mentally ill, financed by the Mental Health Projects Grants program of the National Institute of Mental Health, have been one cause for this increasing need for staff.

Also, general hospitals are developing psychiatric services which are furthering the development of integrated social service departments and expanding the need for more personnel, both medical and psychiatric social workers. It is appropriate that at this time the Medical Social Work Section, and the Psychiatric Social Work Section of the National Association of Social Workers, have collaborated in a statement on *The Practice of Social Work in Hospitals*.² It covers the services of the social service department including: social casework; social work consultation; participation in planning services and developing policies within the hospital; participation in education, training and orientation programs; research and participation in community planning. Another major segment of the publication covers the administration of the social service department.

In the schools of social work in the United States last year there were over 1,000 students being trained in psychiatric field work facilities, and the interest of students in preparing for careers in mental health has remained high. Support for training of social workers for mental health careers from the National Institute of Mental Health has now reached \$4,300,000 and is distributed among

50 schools of social work. In 10 schools support is provided for third year or doctoral training. Some experimental units are being used for training in community mental health, such as the Wellesley Human Relations Service and the Illinois Mental Health Centers with community organization orientation.

The figures of membership in the Psychiatric Social Work Section of the National Association of Social Workers have shown a remarkable spurt with over 4,000 persons now being members. One factor responsible for this trend was a change in membership requirements which now permit social workers employed in the new and pioneering types of mental health facilities to be eligible for membership. This growth in membership is further emphasized by the activity of local Sections which develop their own program interests. An important development is the improved coordination and cooperation of local Sections of psychiatric social workers and local groups of psychiatrists in planning joint activities. This development is sponsored by the American Psychiatric Association Committee on Psychiatry and Social Work and the Executive Committee of the National Psychiatric Social Work Section.

As more mental patients move out of the hospital back into community life an increasing number of community health and welfare agencies are assisting in rehabilitative efforts and psychiatric social workers are called upon to act as consultants for guidance and programing. This consultative role is being studied and several schools of social work are providing course content in this area.

A new publication³ of the National Association of Social Workers gives an overview of the activities of psychiatric social workers in direct service to patients, non-

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² The practice of Social Work in Hospitals. Joint Committee of the Medical Social Work Section and the Psychiatric Social Work Section, National Association of Social Workers, 95 Madison Ave., New York 16, N. Y., 1960, \$.25.

³ Psychiatric Social Workers and Mental Health. Committee on The Role of the Psychiatric Social Worker in Mental Health, Psychiatric Social Work Section, National Association of Social Workers, 1960, \$1.00.

clinical activities and other programs including social agencies, public health organizations, residential schools and children's institutions, schools and school systems, the armed forces, correctional agencies and industry. It contains a good bibliography.

Another recent publication⁴ of the Association presents the findings of a workshop conference in which recognition is taken of the increasing involvement of social workers in group services in psychiatric settings. Both social caseworkers and social group workers participated with the goal of identifying the group elements of social work practice. This

document, too, has a series of well selected references.

The Psychiatric Social Work Section has presented annually an Institute which precedes the National Conference on Social Welfare. This past year the topic was "Current Trends in After Care of the Mentally Ill." The Institute encompassed various aspects of after care programs, such as foster home care, day hospitals and after care clinics and programs under public and private agency auspices as well as community planning for after care. It is to be hoped that the proceedings of this Institute will be published, for many interesting and worth while facts and programs were described, and the contribution of psychiatric social workers in the planning and operation of these programs was discussed.

⁴ Use of Groups in the Psychiatric Setting—A Report. National Association of Social Workers, 1960, \$2.50.

MENTAL HEALTH IN EDUCATION

W. CARSON RYAN, PH.D., ED.D.¹

The school teacher is potentially the most important professionally trained individual in the development of mental health, says Lawrence K. Frank in a recent survey report on professional schools(1). "Next to the home and parents, the school and the teachers are in the most promising position to foster mental health in the classrooms through direct relations with the class as a group and with individual pupils." Frank adds, however, that student teachers are not receiving systematic training in the newer concepts of personality development, and are still being taught educational psychology derived primarily from animal experiments that ignored the emotional and other aspects of learning, especially symbolic learning.

Recently there has been much more emphasis on positive mental health, and here the schools have a definitely useful function. "What happens to a child in school," says Dr. R. H. Felix, in a recent reprint series from *The Personnel and Guidance Journal*, "helps to determine how he will develop, what kind of person he will be, how he will be able to meet the stress and demands of life"(2).

Dr. Felix points out that since the end of World War II school systems have become one of the largest employers of mental health personnel. "At the same time the mental health professions have been intensifying their interest in schools as a vital place to study the development of children and new ways of reaching children before they develop serious problems." In the past, he says, much of the work in school mental health was focused on the psychodynamics of the child and his teacher. But now research clues from other areas have suggested a refocusing of our concerns. "For example, recent studies of mental hospitals by social scientists have pointed out the significant effects on the patient's behavior on the total environment of the hospital. These studies suggest that we need to broaden our outlook to include, among other factors, study of the school as a social system which affects the mental health of the children. This means that we must investigate the effects on the children of such aspects of the overall school program as its organization and administration, the relationships among the total school staff (including non-teaching staff), varying perception of staff roles, and methods of staff communication. Going

¹ Chapel Hill, N. C.

even further, we need to study school and community relationships and the role of the school, as part of the larger community environment."

That instructional activities must remain the definite task of the teacher is emphasized by Bonney(3). "This means that a teacher is not a clinician, a substitute parent, a group psychotherapist, a counsellor, a test specialist, or a psychologist. It follows, then, that what teachers do to promote mental health among pupils must be those kinds of things which are intimately involved in their usual roles as teachers. Unless a teacher can help achieve mental health goals through socialization procedures, classroom management, sociodrama, class discussions, physical education activities, clubs, programs, and pupil contributions to all kinds of endeavors, then all that is left is the stimulation of intellectual growth through assignments which are prepared and 'handed in' on an individual basis. Although this is important, it falls far short of the potentialities of the school for helping our young people for the diversities of life and for the fuller satisfactions of living."

What kind of professional preparation can be provided for teachers and other educational workers if they are to perform adequately in a mental health program? Herbert A. Otto, of the University of Georgia College of Education has recently reported on efforts at his institution to meet this problem. The teacher-training program, he says, needs to help teachers and other school workers on "how to recognize symptoms, how to give basic supportive help, and how to make adequate referrals and utilize treatment resources." Programs with emphasis on the development of positive mental health, he says, are based on a recognition of the importance of the teacher as a key person in the child's emotional maturation and his character and personality development. "It is a fundamental hypothesis of such programs that if the teacher can be given an increased measure of self-understanding, some basic knowledge of personality dynamics and a grasp of funda-

mental health principles or concepts, he will be in a better position to create the type of classroom environment which will foster healthy growth"(4).

The 1960 White House Conference on Children and Youth gave considerable attention to the "emotionally handicapped." It recommended that National, State, and local governments participate in financing treatment services for emotionally disturbed children on the same basis as for other handicapped children—specifically, that facilities for prevention, detection, diagnosis be improved and extended, with provision of mental health consultation services in public schools, both rural and urban, especially in the lower grades, and that community guidance services be provided, particularly children in the early school years. The Conference also recommended that "in view of the shortage of adequate personnel and the rapidly increasing number of emotionally disturbed children, special efforts be made to attract medical students into the field of childhood emotional disturbances, by making these positions more rewarding financially and more satisfying professionally and socially; further, that the professional preparation of all people concerned with children include courses in human development and behavior, and training in the early detection of emotional disturbances and in referral methods and resources. It was also suggested that "selected youth and lay adults participate under supervision in established community programs for the mentally disturbed"(5).

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PSYCHIATRIC NURSING

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There is considerable evidence that many nurses are becoming increasingly involved in the various aspects of psychiatric nursing including the promotion of mental health, the prevention of mental disorder, the treatment and curative aspects of mental illness, rehabilitation of the mentally ill and follow-up nursing care of patients after discharge from mental hospitals.

A review of the *Newsletter* of the NLN Council on Psychiatric and Mental Health Nursing indicates that state and local council members have been concerned with a wide range of activities and programs. These included the following topics: education and training of the psychiatric aide or technician; the needs of children; nurse-patient relationships; the role of the head nurse in the psychiatric setting; application of psychiatric nursing principles in general nursing practice and follow-up care for discharged psychiatric patients and their families(1).

Additional organized activities included a series of regional institutes on psychiatric nursing practice sponsored by the American Nurses' Association Conference Group on Psychiatric Nursing Practice(2), a regional workshop on inservice training in psychiatric nursing sponsored by the WICHE Mental Health and Nursing Councils(3), programs on psychiatric nursing at the APA Mental Hospitals Institute(4), at the annual meeting of the American Psychiatric Association(5), and at the biennial convention of the American Nurses' Association.

Continuing emphasis is being placed on the need for clearer definition of the role of the psychiatric nurse. The role of the staff nurse in psychiatric settings varies from situation to situation and is influenced by several factors over which the nurse may have little control(6). Peplau has stated "when mental illness is seen as a result of interpersonal and sociological influences which shape patterns of living, then the actions of the nurse in intervening in socio-

psychiatric problems must be guided by an awareness of what she is doing and by disciplined use of the work role in relation to the problem at hand"(7). Nurses and their co-workers need to examine certain patterns of staff-patient interaction which tend to perpetuate psychopathology of patients(8).

The nursing of children with special emphasis on the needs of emotionally disturbed children and retarded children is an area of increasing interest and concern. Professional nurses are playing a large part in the treatment practices and in direct care of individual and groups of emotionally disturbed children(9). A therapeutic program implemented in a boys camp setting for the treatment of neurotic children, revealed that the infirmary is suited particularly to meeting the adaptive forms of neurotic expression as those which find outlet in somatic complaints(10). Emphasis is being placed on the need to better understand the retarded child and his parents and in turn stimulate community action in the field of mental retardation(11).

Interest continues in the mental health aspects of public health nursing. The Visiting Nurse Association in Hartford, Connecticut is currently involved in a 3-year study project designed to develop and evaluate public health nursing services for mental patients and their families(12). The public health nurse is seen as playing a number of roles in mental health(13). Experience in one agency has indicated the use of group meetings led by a psychiatrist and mental health nurse consultant as a useful tool in helping staff nurses to better understand their patients(14). The development of newer programs and the involvement of public health nurses in a broader scope of mental health services raises many questions for those interested in the preparation of public health nurses as well as the continuing education of those currently employed(15).

Research in the clinical aspects of psychiatric nursing is gaining momentum. Studies have focussed on the attitudes of nurses to-

¹ National League for Nursing, 10 Columbus Circle, New York 19, N. Y.

ward various categories of activities in psychiatric nursing (16), on an operational definition of what psychiatric patients perceive as therapeutic interaction among their daily life on a psychiatric ward (17) and the use of techniques to reduce or eliminate the frequency of incontinence and to increase the incidence of the patients' socially desirable habits in a psychiatric ward setting (18).

Nursing educators have been involved in numerous activities related to undergraduate and graduate nursing education. Continuing study is being given to the problem of integration of psychiatric nursing concepts throughout the basic nursing curriculum (19). Educators are concerned with the application of the principles of behavior in all clinical nursing situations (20). The inadequate recruitment of nursing students for psychiatric nursing has indicated the need for a critical examination and reappraisal of the content and learning experience currently offered in the basic course in psychiatric nursing (21).

A small group of nursing faculty members from graduate nursing programs in the western region participated in a seminar group to define the clinical content for graduate programs in psychiatric nursing (22).

Problems in aide education including the selection and training of the psychiatric technician (23), the desirability of periodic reassignment of aides to various shifts (24), the aides' role in remotivation (25) and the use of special techniques in psychiatric aide inservice training are areas of current interest. The NLN Seminar Project for Teachers of Psychiatric Aides has completed a series of seminars in Arkansas, North Carolina, South Carolina and Tennessee (26). Articles written by aides for *The Correspondent* indicate considerable interest and enthusiasm for the therapeutic aspects of the aides' role in working with patients (27).

While much has been accomplished, there is need for continuing interest, initiative and support in the study of such problems as the improvement of learning experiences in psychiatric nursing for undergraduate

and graduate students, definition of the role of the psychiatric nurse in community mental health facilities, i.e., day and night hospitals and mental health clinics, and increased recruitment of nurses for psychiatric nursing.

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FAMILY CARE AND OUTPATIENT PSYCHIATRY

WALTER E. BARTON, M.D., AND WILLIAM T. ST. JOHN, M.D.¹

FAMILY CARE

The number of Family Care placements in the United States increased during 1960.

TABLE 1

Patients in Family Care in the United States
as of June 30, 1960

	ALL PATIENTS	MENTALLY ILL ONLY
New York	2,875	1,940
California	1,558	999
Michigan	1,205	855
Illinois	1,179	931
Ohio	1,061	1,061
Maryland	497	497
Pennsylvania	418	418
Kansas	394	394
Rhode Island	277	277
Massachusetts	467	216
Idaho	33	33
Florida	29	29
Virginia	14	14
Veterans Administration (January to December, 1959)	2,500	1,946
Total	12,507	9,610
Texas (convalescent leave)	1,039	
1959	10,816	6,854

Pennsylvania reported a substantial decrease due to a change in the method of statistical reporting, and the fact that they are now using the definition of Family Care required by the National Institute of Mental Health. Texas reported 1,039 patients on Family Care convalescent leave. It is doubtful whether the use of Family Care in that state conforms to that in common usage elsewhere.

Hester B. Crutcher reported a marked increase in requests for Family Care placements from both patients and staff of hospitals where most of the wards are opened.

¹ Superintendent, and Assistant Superintendent, Boston State Hospital, Boston, Mass.

The patients in open ward hospital settings are given more freedom than they formerly had, and are encouraged to assume increasing responsibility for the planning of their own time and activities(1).

The Veterans Administration reported 1,300 patients discharged to the community from Family Care during the past 5 years. They also note:

(a) During this period, patients with a residence in the hospital of 10 or more years increased to 36% of the total placements, and

(b) a steady increase occurred in the placement of patients in the 40 to 50 year old group(2).

Giovanni and Ullman found that men who were comparatively unsuccessful in first Family Care placements may well have more favorable outcomes when replaced. The best single indication for replacement is a history of a relatively long stay in the family care home. A "relatively long" first placement, according to the authors, amounts to 4 or more months.

If a person has been in the hospital more than 10 years, the authors state, success in Family Care is more likely to follow than in those cases where the hospital residence was short(3).

In Uppsala, Sweden, Dr. Wahlström and his staff of two doctors and three nurses care for 300 patients in Family Care. The homes are located in rural areas and a single home may care for as many as 25 patients. The amount of money paid to each family varies, with the degree of illness; patients who are sicker are paid for at higher rates and tend to be in the larger homes.

In Beilen, Holland, an outstanding family care program utilizes an inpatient admission center as a day hospital for those patients placed in the community. Patients in foster homes report each morning for therapy and

return home at night. This program has several advantages :

(a) Intensive treatment makes possible the placement of patients who are still quite sick.

(b) Rehabilitation is easier to accomplish.

(c) More adequate supervision is possible than is customary in a family care program.

(d) The inpatient admission center is able to supervise more patients in active therapy without expansion of bed capacity

(4).

Several states reported the use of radio and TV—in some, closed circuit TV—as a public education service to explain the advantages of Family Care.

The *Family Caretaker's Clarion*, a periodical published by the caretakers of Family Care homes in California, provides a medium of education and communication on a state wide basis. The interest aroused by the news sheet has also served to publicize the program and to recruit additional Family Care homes.

OUTPATIENT PSYCHIATRY

At the 116th annual meeting of the American Psychiatric Association, Moore, Albert, Manning, and Glasser reported that prior to a community extension service set up to study and develop alternatives in hospitalization, 80% of the patients on the waiting list at the hospital became inpatients within 90 days. The remaining 20% received outpatient care or refused all treatment. With the advent of the community extension service, only 40% of the patients were admitted as inpatients; full time hospitalization, therefore, was circumvented for 60% of the people for at least one year. Of the 60%, 18% were treated in a day hospital and 42% were treated without institutional care of any kind(1).

Robinson, de Marche, and Wagle in their investigation of the community resources in mental health indicate that Outpatient Clinics are concentrated in the northeast area and north central states. Very few counties in the rest of the country had such services. In the southern states 87.9% of the counties lacked clinics, and in the mountain and Pacific areas 82.9% of the counties

were without such service. Counties without mental health clinics usually lacked other supportive services as well. The areas that did have clinics were concerned about the small number of patients seen. Often there was a waiting period of 2 months for diagnosis and 5 months for treatment. The community tended to resent waiting for service and this reacted unfavorably. Objections tended to develop in the referring agencies such as the courts, schools and private professional groups. The lack of coordination among the facilities available for different types of diagnosis and treatment was evident. Often a patient would be evaluated in one center and would be referred to another center for treatment where the diagnostic process was repeated. The authors emphasized the need for a community "all purpose agency" that would be not only a diagnostic center but also a referral agency. Too few clinics currently exist. The United States Public Health Service, on the basis of the 1954-1955 data, reported that there were 1,234 outpatient psychiatric clinics in the United States. (Bahn and Norman, 1957.) They estimate the need for one clinic for every 50,000 people(2).

The deficit in outpatient clinics is partly due to the lack of full time psychiatrists. Worley's survey indicated that the largest number of psychiatrists employed by outpatient clinics work on a part-time basis. They come from the inpatient psychiatric staff, private practice, the teaching profession, research, and the consultant fields(3).

Coleman emphasizes the need for around-the-clock outpatient service without appointments to allow the patients and their families to feel more comfortable because of the availability of help whenever it is needed. Twenty-four hour service has proven to be a way of preventing hospitalization for some, as well as a way of screening others during their period of emotional crisis, to allow them to get into proper treatment. In addition, it frees the city hospital wards from their useless and demoralizing task of being way stations on the path to a state mental hospital(4).

Lowinger and Gottlieb bring out the changes in management of the schizophrenic patient. With many schizophrenics now living in the community, and with the

use of more drugs in their treatment, the development of a drug clinic as the hospital's outpatient facility was initiated. Here various drugs can be used and reviewed with the patients returning at frequent intervals for regulation of medication depending upon their responses and their needs. More patients can be cared for in less time with this arrangement of the clinic(5).

An outstanding contribution during the past year was "A Guide to Communities in the Establishment and Operation of Psychiatric Clinics." It provides essential information about the organization, staffing, administration of psychiatric clinics, and the clinical and related educational and consultant services in local American communities(6).

Casey, Rackow and Sperry, in "Observations on the Treatment of the Mentally Ill in Europe," found psychiatrists, social workers and psychologists working as a team in outpatient clinics as they do in America. The outpatient clinics served to screen new cases. Individuals who have developed emotional illnesses go to the outpatient clinic for examination and evaluation. Where possible, they are treated in the outpatient setting in the hope that it will not be necessary for them to be sent to the hospital. However, if hospitalization is necessary, a preliminary diagnostic work-up is completed. Therapy, in the outpatient clinic, includes a moderate use of tranquilizing drugs. Great Britain's outpatient clinics are staffed by the psychiatrists on the staff of the local mental hospital. One physician may serve in a number of different clinics(7).

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FORENSIC PSYCHIATRY

WINFRED OVERHOLSER, M.D., Sc.D.¹

As usual, the periodical literature lays stress on the criminal aspects of forensic psychiatry. One of the most discussed cases is that of *Regina v. Podola*, an English murder trial in which amnesia was unsuccessfully pleaded in bar of trial rather than as a defense to the charge. Hargrove(1) suggests that the defendant could well have been confined in Broadmoor for study and treatment rather than being rushed to execution. Gooderson(2) is likewise critical of the way the case was handled.

Considerable attention is given, particularly in England, to the recent (1957) Homicide Act recognizing "diminished responsibility" as a defense. Neustatter(3) suggests that the defense should not merely shorten the sentence. Maddison(4) denies that there is a sound basis for the theory that a man is either accountable or unaccountable. Williams(5) discusses a recent English case in which it was held that the judge may guide the jury in interpreting the statute. Lord Keith(6) points out that the new law modifies the conception that there is no "halfway house" between complete legal irresponsibility and the understanding of a reasonable man. Starnes(7) notes that New Mexico in a recent case has recognized partial criminal responsibility. Lady Wooton(8) reviews recent experience with the Homicide Act, and looks on the concept as an attempt to "escape from the shackles of a penalty rigidly fixed by statute." She hopes that ultimately the whole concept of responsibility will "wither away," permitting the psychiatrist to cease his "masquerade as a moralist."

An anonymous note in the *Stanford Law Review*(9) discusses a recent California case (*People v. Gorshen*); the writer calls for a reappraisal of the M'Naghten Rule

and of the awkward bifurcated procedure of California in cases in which insanity is pleaded as a defense. McEntee(10) discusses a recent New Jersey case (*State v. Lucas*) in which the M'Naghten Rule is reaffirmed.

Interest in the New Hampshire and Durham Rules continues. Reid(11) contributes a full and scholarly study of the evolution of the New Hampshire Rule as enunciated by Judge Doe. Clayton(12) studies the operation of the Durham Rule and concludes that "society will benefit most by sending more criminals to hospitals and fewer to prisons."

Perret(13) discusses the contributions of psychoanalysis to medico-legal examinations, both in understanding unconscious motivations and in aiding in the offender's rehabilitation.

Augle(14) reviews the care and treatment of psychopathic offenders in Scandinavia, with reference to institutions. Tasher(15) discusses a treatment program in a maximum security hospital. Wilson(16) describes the functioning of a psychiatrist in a law enforcement agency. He urges further use of the psychiatrist by police departments. McKendree(17) discusses the procedure for the evaluation and release of "dangerous" patients. He concludes that the patient on convalescent status is less of a menace to the community than a nonhospitalized member of society.

An excellent review of sexual psychopath statutes is given by Swanson(18). He is critical of the statutes as lacking objective standards and as (in some cases at least) being violative of civil rights.

Nyirö(19) discusses the impaired judgment of the senile as affecting criminal responsibility.

Slovenko(20) considers the question of medical privilege and its relation to the

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work of the psychiatrist. He points out as an anomaly the fact that in three states the psychologist has statutory privilege, whereas the physician has none! The question of privilege is discussed at length in Report 45 of the Group for the Advancement of Psychiatry(21).

Modjeska(22) deals with the legal concept of delusion (in will cases) as exemplified in a recent Wisconsin case (Will of Riemer). The court seems to have adopted a more psychiatric viewpoint than formerly in determining the effect of delusion on testamentary capacity.

Lebensohn(23) attacks the cumbersome and expensive provisions of the District of Columbia law for the commitment of the mentally ill. His criticisms are applicable to a wider circle of jurisdictions than the District only!

Several symposia may be mentioned—the Ohio State Law Journal(24) (Weihsfen, Lasswell, Kittrie, Rita James, Ralph Patterson, *inter alia*); Law and Contemporary Problems on Sex offenses(25) (Ploscowe, Glueck Sr., Bowman and Engle, J. E. H. Williams, Sturup) and Cleveland and Marshall Law Review(26) (Szasz, Crawfis, Davidson and Perr, to mention a few contributors).

As for books, one should mention David Abrahamsen's *Psychology of Crime*(27).

Very few legislatures were in session, and the grist was slight. Georgia(28) transferred the Milledgeville State Hospital to the State Board of Health. Wisconsin(29), for no very clear reason, prohibited the issuance for one year of a motor vehicle operator's license to persons convicted of a sex offense—a curious penalty imposed on a special class of offenders!

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ADMINISTRATIVE PSYCHIATRY

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Administrative psychiatrists, constantly preoccupied with the desire to learn new and more effective ways to treat psychiatric illness, have been studying the programs developed in many other countries. They have been experimenting with modifications of these programs in this country as well as assessing the value and cost of their own. The limitation to two loci for patient treatment, either as a full-time resident in a mental hospital or in the psychiatrist's office while living at home, has given way to many modifications of treatment facilities for greater adaptability to the patient's needs. A great deal has been learned from England where the National Health Service has provided for a unification of psychiatric service which brings in general practitioners and public health authorities to the treatment program. The mental hospital has been the hub of these developments with the hospital psychiatrists going out for home visits, running clinics in the general hospital, and operating day centers(1, 2, 3, 4). The new English Mental Health Bill (1959), which provides a single code covering both mental illness and mental deficiency, will undoubtedly raise the already high percentage of voluntary patients in their hospitals and increase the movement of patients in and out of the various psychiatric treatment facilities(5, 6). In the Soviet Republic visitors indicate that the psychiatric dispensary in the community rather than the hospital is the nucleus for psychiatric treatment. That the hospitals of Russia are generally better staffed than those in the U.S.A. is only one of the interesting observations made by Kalinowsky(7) and Kline(8).

At the Hudson River State Hospital, a special sub-hospital has been created for direct admission of patients from Dutchess County, New York. It has its own day care center(9). Louisiana outpatient centers were set up at strategic points in the area served by a state hospital with a resultant

great saving (75%) of hospital admissions (10). Others report success with emergency psychiatric service prior to admission(11, 12, 13). Careful studies at the Butler Mental Health Center show that the community can save money by utilizing any of several types of active treatment, including long individual psychotherapy, instead of hospitalization(14, 15).

For years many authorities have stated that psychiatric hospitals should be kept small and not overcrowded. A VA hospital study shows that smaller hospitals release patients earlier than large ones regardless of whether the staff/patient ratio is high or low(16). A method for breaking large hospitals into small units of 250 patients has been described(17); actually a somewhat similar procedure to this is the prevalent one in France, the separate units being given separate names. At the Philadelphia General Hospital, two periods before and after an administrative decision to limit admissions to bed capacity were compared: under the more adequate conditions, not only were as many different patients treated but the number of readmissions was reduced, the length of stay shortened, and the number of patients committed to a state mental hospital decreased(18).

Epidemiological studies on the incidence of mental illness in the U.S.A. have been reviewed with comment by Plunkett and Gordon(19). British statistics generally confirm American ones(20). Other reports are from Thailand(21), South Pacific(22, 23), and Norway(24). It appears that local factors concerning availability and type of psychiatric service are most important factors in determining the number of admissions. Christe, reporting on the increase in admissions (5½ times), decrease in length of hospital stay (½ times), and increase in readmissions (10 times) between 1917 and 1956 at the University of Basle, recommends that the neurotic depression be treated in general hospitals, that autonomous open pavilions, old age homes with locked units, and special alcoholic divisions be developed(25). It

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is suggested from Sweden that mental hospitals of the future be planned on the basis of 5 beds per 1,000 population (26).

Continued experience with the day hospital and day-night hospital is being published (27, 28, 29, 30, 31, 32), as well as that of psychiatric units in a general hospital (33). For those planning on developing the latter, a section in *The Modern Hospital* would be worthwhile reading (34). Adolescent units are described as they have functioned in a psychiatric hospital (Bellevue) (35) and in a general hospital (Michael Reese) (36).

Work with pay in industrial projects for hospitalized psychiatric patients seems to be increasing. Reports have been published recently from England (37), the VA (38), and Manhattan State Hospital (39, 40). Two psychiatrists and one architect authored the World Health Organization publication "Psychiatric Services and Architecture" (41). It considers outpatient clinics, early treatment centers, day hospitals, psychiatric hospitals, after-care homes, and sheltered workshops. Consideration is given to the design of mother-baby units in the mental hospital.

It is not possible to review the many articles dealing with the interaction of staff attitudes and patient welfare and improvement, the problems of administrative functioning and communication, the relationship with the community. Recently a review of the literature titled "The Mental Hospital and the Treatment-Field" has been published covering literally many hundreds of articles and books published over the years (42).

Administration of the Public Psychiatric Hospital is the subject of GAP Report #46 (43). Many of the administrative problems found in small non-governmental supported hospitals are discussed in the *NAPPH News Letter* (44).

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MILITARY PSYCHIATRY

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Increasing recognition and investigation of new stresses arising out of changes and new developments in military practice have prompted a re-evaluation of training programs for military personnel.

The experiences of Korean prisoners of war led Wolff(1) to examine the historical records of the prisoners of war in the light of scientific knowledge regarding human reaction and environmental stress with particular attention to interrogation. He submits the following recommendations to officers concerned with "Code of Conduct" training problems :

That the military training and discipline be directed so that individuals may be identified with military groups in which there is an unbroken chain of command to the end that officers be unquestionably trusted and obeyed even when a captor discredits or attempts to undermine authority ;

That the futility and genuine hazards of collaboration with the enemy be emphasized ; there should be no doubt as to what is collaboration and what is proper conduct ;

That it be insured that all military personnel know what to expect as a prisoner of war and what is expected of a prisoner of war by his own people in the way of resisting collaboration.

Furthermore, Wolff urges continued support and encouragement to the prisoner from the home government. All steps should be taken to communicate, such as mail

service, food drops, and dropping of inspirational leaflets. The civilian community must instill in the individual, prior to military service, the need for commitment and the determination that a committed man's loyalty has no breaking point.

Kinsey(2) considers that new stresses have been added to submarine duty by the feasibility of prolonged submersion and the development of new weapons. These stresses are expected to increase. Operating personnel are faced with a contracting environment. There is a decrease in sensory input principally due to lack of variety of stimuli ; energy output is reduced, and long periods of isolation characterized by long periods of repetitious activity are experienced. These conditions demand refinements in assessment and selection of personnel for this type of duty. He describes an experiment for determining motivational factors involved in volunteering for unusual or hazardous duty. There is a need for tests to measure the duration of motivation which could be applied periodically. He recommends that training be extended to meet the new and more prolonged stressful conditions likely to be encountered in the future. Mention is made of one program along this line using a two team concept.

Rand(3), an artillery officer, wrote about the conditioning of the soldier for nuclear war. While this article is directed to those concerned with the training of the soldier, it informs us that line officers are fully aware of the psychological aspects of nuclear warfare and are working out their own solutions in the direction of preventive psy-

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chiatry. He noted that there is a paucity of information concerning the psychological impact of nuclear weapons on human beings who operate on the battle field. Likewise there is little known of the effect on the commander and on his decisions pertinent to the reaction of his men to this new type of warfare. He maintained that at present there exists a deep nation-wide apprehension which is also possessed by military personnel. He proposes that training should prepare the individual to accept greater stress and to sacrifice all if necessary. Because of the loss of mutual support under nuclear battlefield dispersion, he emphasizes that training be directed towards greater development of individual confidence, initiative and self-reliance since the soldier must become accustomed to being isolated in battle.

Ruff(4) discusses crew selection for space flight. Until such time as actual manned space flights are made, he proposes that the nature of the stress expected to be encountered should be studied under conditions simulating space flight. The selection and predictions should be made on the basis of current methods of evaluating mental stability and tested in laboratory stress experiments. As data concerning stress and behavior in actual space missions becomes available, the tentative criteria can be more explicitly defined and more objective measures employed.

Kolmer and Lysak(5) studied a sample of 100 trainees who were given a profile rating of S-2 and S-3. These refer to neuropsychiatric status or degree of emotional stability indicating mild(2) and moderate(3) defect.

In a follow-up shortly after induction and again early in the basic training cycle they found that 80% had too high an S rating. It was their opinion that this high rating called the attention of the commanding officers to the psychiatric abnormalities and implied a need for modification of training demands. This was considered to be detrimental to the inductee. It was their conclusion that an accepted inductee stands a better than 9-1 chance of completing his basic training. They found that the induction station physicians evaluated the present potential for effective duty with diminished regard for

previous psychiatric disability.

Roff(6) correlated histories of individuals dealt with in child guidance clinics during their grammar and high school years with their military adaptation. He found that a history of earlier peer group difficulties tended to identify subsequent neurotic deviation in the service. In a second phase of the study it was evident that some types of diagnostic-predictive comment were not discriminative with respect to subsequent service adaptation. However, when clear-cut diagnostic evaluations had been made, the long time predictability was substantial.

Marshall(7) describes a testing program carried out in the field over a period of 20 months. The testing was done by clinical psychology specialists under the supervision of a clinical psychology officer. The administration of the tests was done in the unit area in whatever space was available such as day rooms, quarters, or any spot providing privacy. Reasons for referral were evaluation of intelligence, evaluation because of poor performance, and evaluation of personality. A Standard battery of psychological tests, including projection tests, was used. The results were submitted to the Social Service section for evaluation and forwarding to the psychiatrist if considered indicated. The objective was to provide a finer screening process in the unit before psychiatric referral, to provide the psychiatrist with a report before the individual was seen by him, to offer assistance to the Social Work Section in understanding the soldier, to minimize the loss of training time, to avoid removing a soldier from his unit and to prevent the development of the patient role and a self concept detrimental to his functioning as a soldier. The effectiveness of the program was shown by the fact that of the 27 patients recommended for duty without referral to the psychiatrist, none was discharged or came to subsequent psychiatric attention while at the basic training center.

Kramer and Young(8) describe a situation where a psychiatrist was assigned as a probation officer. The clinical record is given in detail. They found that the diverging responsibilities of the probation officer and the psychiatrist—the former to the court, the latter to the patient—made it diffi-

cult to render completely satisfactory service to either party. They considered the dual relationship a serious limitation to the employment of a psychiatrist as a probation officer. They conclude that where psychiatric treatment is indicated, the psychiatrist should act in a strictly professional capacity and another officer should be assigned as probation officer.

Hillbom(9) studied more than 3,000 soldiers with brain injuries from among the soldiers of Finland who incurred their injuries during the wars of 1939-1940 and 1941-1944. He selected 415 cases in a statistically valid manner for detailed evaluation. He had been of the opinion that ratings of disability were either too high or too low because of a lack of information on the course of brain injuries. One section deals with the psychiatric aspects. Of interest is his opinion that the neuroses following trauma are not compensation-striving but a sequel to the stress of the handicap and also of interest is his statement that there is not a single case of "so-called genuine schizophrenia" in his case material. This study is available in English.

This year there has been the largest number of listings of references in foreign languages that has occurred in the Index Medicus in recent years(10).

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PSYCHIATRIC EDUCATION

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In medical education circles concern with the sobering facts of student and personnel shortages continue to plague our current activities and obscure future planning. Ward Darley(1) predicted an annual deficit of 3,000 physicians in 15 years unless major expansions in medical schools are undertaken. A comprehensive study of this problem was reviewed by a U. S. Public Health Service officer(2), who suggested that to keep our present physician-to-population ratio, we will have to increase our output from medical schools by 50%. To further worsen the picture, many observers

question whether our society, with greater numbers of old people, an ever increasing standard of living and new and complicated medical advances, will accept *merely* a holding of the physician-population ratio constant. Yet to *merely* hold the ratio constant will take *very* major expansions of training facilities, and to do more will require a "crash program" of unheard of proportions in the next decade. How complex a problem any expansion of medical school output will be is underlined by the fact that for the third year in a row the number of applicants for medical schools decreased (this year about 3% over last year)(3). The Director(4) of the Office of Scientific Per-

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sonnel of the National Academy of Sciences noted the stiffly competitive field we find ourselves in when searching for "high talent." As he points out, the solution is much more than improved recruitment of college students and must involve changes in our whole educational system, beginning at the grammar school level.

It appears obvious that only as we can solve the general problem of medical manpower shortages do we have any possibility of significantly altering pressing shortages of psychiatrists. In 1958 the Council of the American Psychiatric Association authorized a manpower study project. This is well begun and tackling: 1. Analysis of the existing psychiatric manpower picture and 2. Techniques of increasing the supply of psychiatrists(5). We are in a period where frequent comparisons of ourselves with Russia occur. Kalinowsky(6), in a recent review of Soviet Psychiatry, estimates there are more psychiatrists per unit of population in Russia than in the United States. He notes that the majority of their medical graduates are women and that their medical school output approaches 20,000 per year (compared with 7,000 per year in the United States).

UNDERGRADUATE PSYCHIATRIC TRAINING

Lief and his associates at Tulane(7) have presented an interim report on a highly significant 6 year project studying the adaptational problems of medical students in relation to their personality dynamics. Hopefully this study will lead to better criteria for medical student selection, as well as training programs to produce "the best fit between personality of medical students and the types of learning experience to which they are exposed." Tyler(8) indicates the abysmally inadequate background of pre-medical students in the basic psychological and social sciences. Paradoxically little is done in the first two years of medical school to rectify this. Tyler's studies of 81 medical schools indicate that less than 4% of clock hours in those years are spent on material in the broad field of human behavior. Our greatest gains in placing behavioral material in the curriculum for medical students has been in the third and fourth years--the clinical years, learning

basic behavioral data in a grossly neglected state. Another author(9) reviewed the manner in which basic psychology--"the science of the behavior of living animals"--is taught in the second year of medical school in New Zealand, and by medical psychologists. Jaco(10) further emphasized the need for extensive social science teaching in the medical school and believes this will lead to the establishment of autonomous departments of behavioral and cultural medicine within medical schools. A model for this type of development is seen at the University of Kentucky with its new Department of Behavioral Science. At Duke an interdisciplinary approach to basic behavioral science teaching has been carried on for 7 years. Cohen(11), in describing this 72 hour lecture and laboratory course, notes that it has been alone effectively *without* a separate behavioral science department.

The amount of current literature describing teaching programs aimed toward the assimilation of a "comprehensive" view of clinical medicine by the student has fallen off markedly in 1960. However a very significant book-length summary report of the Commonwealth Fund supported project at the University of Colorado appeared(12). This compares the results of the more classic teaching of medicine in the outpatient departments of Colorado General Hospital with those of teaching medicine "comprehensively" in the clinics of nearby Denver General Hospital.

Several interesting studies of teaching techniques for medical school psychiatry appeared. At the new University of Florida School of Medicine(13) role playing techniques were found highly effective for large medical school classes. They appeared much more useful than films because of the high degree of peer involvement. Stunkard(14) also found role playing techniques useful for elucidating clinical problems, particularly those involving doctor-patient interactions. Interview and diagnostic processes were well followed by this type of presentation. Werkman(15) used role playing techniques in teaching the interpretive process to medical students. Cases worked up in a children's psychiatric service were reviewed by students and staff, and the students were prepared for interpretation of the results to

the parents of the clinic children. The preparation was largely through role playing demonstrations and the students began to find answers to such questions as, "How do I tell this mother that her little boy has unmet emotional needs?" A group at the University of Kansas Medical School(16) describe 4 years experience with the use of closed channel television (black and white), in teaching psychiatry, particularly to medical students. Up to 100 students viewed interviewing and other demonstrations with the maintenance of a high interest level. It was felt this was a valuable tool for psychiatric teaching—"simple, cheap, reliable, convenient and efficient."

GRADUATE TRAINING

Latest available figures(17) on psychiatric residency programs indicate there are 303 programs in existence (last year 288), with 3,009 appointees (last year 2,770) and 649 vacancies. This gives an occupancy rate of 82% (last year 78%), compared with 87% for all residency in all specialties in the U. S.

Foreign medical school graduates continue to occupy an important place in our training programs with 6,720 present in the U. S. in all residencies (24% of residents). In psychiatry there are currently 566 foreign medical graduates, giving us 19%—or a somewhat lower percentage than for non-psychiatric residencies. The Educational Council for Foreign Medical Graduates reports(18) that as of August 15, 1960, they have evaluated the credentials of over 20,000 foreign trained physicians seeking internships and residencies here. Twelve thousand and eleven had taken the examination with 62.2% qualifying with scores of 70 or above. Slightly under 40% qualified for a standard certificate with scores of 75 or above. The American Hospital Association has held December 31, 1960, as the final date for compliance with their order to clear hospital rosters of uncertified foreign medical graduates or lose their accreditation by the Joint Commission(17). This will pose many individual problems and for certain selected hospitals a very heavy immediate burden. However there has been general acceptance of this move as necessary to maintain reasonable quality of

trainees and training programs. That it constitutes a major problem to any of our hospitals and training programs, underlines in another way our basic shortages in medical student production.

Goshen(19) in an excellent and critical review of psychiatric training takes a most pessimistic view of our field, pointing out that the demand for psychiatric services is increasing exponentially—due to increasing prosperity and sophistication of people as well as population growth—while we are not increasing our production of psychiatrists very greatly. He believes that we must meet this challenge or else the science of human behavior will be taken over by more vigorous groups. He places the main burden on the medical schools and psychiatric education therein. Jacques Barzun(20) puts his finger on one of the major problems in present day American academic life—and this includes psychiatry: our modern attitude toward research, which he compares to the medieval attitude toward pilgrimages. He feels that the influx of research money has resulted in institutions that are primarily educational placing a higher premium on research than on good pedagogy. He notes the contempt that many professional teachers have for teaching *per se*, with their advancement academically dependent on research productivity rather than teaching capability. In this regard Kalinowsky's(6) observation that training and research are generally separate in Russia, with independent psychiatric research institutes being the rule, is of more than passing interest.

The Johns Hopkins group(21) have continued their studies on the relation between the therapist's (psychiatric resident) attitudes and personality attributes and his effectiveness with schizophrenic patients. This is an article of very great significance to everyone engaged in the business of selecting and training psychiatric residents. Another interesting study on the effects of the physician's attitudes on outcome of treatment is described by Haefner, *et al.*(22), in an article entitled, "Physician Attitudes toward Chemotherapy as a Factor in Psychiatric Patient's Response to Medication." Bailey(23) chides us for our "schizoid" attitudes toward brain and behavior and

urges us to weave biological data—"so rapidly accumulating"—more intimately into our psychiatric teaching and cease to teach our "neophytes in terms of mythological pseudoscientific pseudoentities."

The importance of the psychiatric resident learning to deal with both the patient and the patient's family is emphasized by the Syracuse group(24). This would appear to be part of his training experience, to be covered in the resident's supervision as well. A Maryland program(25) indicates a method for cultivating community mental health leadership through placement of third year residents in the role of consultants to local health departments and as directors of part-time mental health clinics. Training of residents in this type of activity, including work with the various other "gate-keepers," learning the techniques of good consultation may be our most useful contributions at present to the preventative field. Certainly the most recent definitive report on other aspects of mental health education(26) indicates the general lack of agreement as to values, goals and techniques.

Rosenbaum(27) presents the difficulties in teaching psychosomatic medicine, remarking that the best teaching is done when the resident has full responsibility for continuous management of the patient and is supervised by a teacher—whether psychiatrist or internist—who is engaged personally and currently in long-term patient care. As he points out, this means well qualified psychosomatic teachers are rare indeed. Laughlin(28) has recently reviewed European psychiatry and remarks on training in English medical schools. Apparently undergraduate psychiatric training there is minimal and few graduates become interested in this specialty. Part of this may be related to slow evolution and strong traditions, making advances in a new field difficult. Lack of money appears to play a role also, England not having had the great impetus to psychiatric education which has come in the U. S. from extensive federal support of training and research.

In February, 1959, the American Board of Psychiatry and Neurology gave formal recognition to Child Psychiatry as a subspecialty in Psychiatry. Allen(29) has reviewed the developments in the field lead-

ing up to this. Robinson(30) gives special emphasis to the unique training developments in the field and their impact on psychiatric training in general. Harris(31) indicates there is a shift in the emphasis in child psychiatric training with more concern being given to the child with learning difficulties. This suggests the need for more extensive work with the mentally retarded child by training clinics.

Szasz(32) raises some searching questions concerning contemporary psychoanalytic training, including the responsibility of the training analyst to the candidate and to the institute. A review(33) appeared from Columbia University outlining the development of and advantages of having a psychoanalytic training unit part of a medical school and university structure.

The future of *post-graduate* medical education is apparently promising. As one author(34) puts it, "the focus in the future will be on truly high quality continuing education in which basically well-educated physicians will be attracted to participate as regularly and as matter-of-factly as they now trade their automobiles." There is a recent listing of all post-graduate courses, including those in psychiatry (a national total for psychiatry of 67)(35). These range from "Contemporary Plays and Morals in the Light of Modern Psychoanalysis," to "Psychopathology for the General Practitioner." The problem of post-graduate training in hypnosis—for psychiatrist and particularly non-psychiatrists—is dealt with by Rosen(36), who is highly critical of the barn-storming, hotel room groups currently on tour. Monroe(37) outlines a pioneer effort (at Tulane) to develop a curriculum for training in hypnosis. While currently this is designed for senior medical students, hopefully it will give ideas and experience applicable to adequate and structural graduate and post-graduate training programs in hypnosis.

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REHABILITATION AND OCCUPATIONAL THERAPY

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During 1960 an unprecedented amount of information about psychiatric rehabilitation has been published. A survey of this vast amount of material leads to certain conclusions : 1. There have been no dramatic, new techniques of rehabilitation developed during the past year ; 2. Not only psychiatrists (1-3), but other individuals(4) and agencies(5, 6) now recognize that emotional and mental disturbances are the most extensive health problems of all and are making efforts to assist in their resolution ; 3. Rehabilitation can no longer be considered

to be just the process of readjusting the mental patient to his optimum role in society after active treatment has been completed(7), but rather a part of total therapy which includes preventive, remedial and restorative measures(8-11) ; 4. There is strong movement toward the development of community facilities in mental health care(12-38) ; 5. The traditional pattern of operation and function of the mental hospital is changing rapidly(39-41) ; 6. Greater concern is being evidenced for the chronic, long-term psychiatric patient(42) ; 7. Work programs(43-47), sheltered workshops(48-50), vocational rehabilitation projects(51),

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facilities for recreation(52) and ancillary methods of treatment(53-62) are increasingly recognized as important; 8. Special attention is being paid to the elderly(63-71) and to the young(72-75); 9. Close follow-up and counseling of discharged patients are now accepted as essential for recovery(76-79); 10. Emotional factors that hamper restoration of the physically ill are being studied, understood and dealt with more widely(80-85); 11. It is more apparent that rehabilitation must be individual rather than group oriented(86, 87); 12. Research in rehabilitation is being pursued more actively than ever before(88-91); 13. More conferences on the subject are being held(92-95); 14. Psychiatry in parts of the world other than the United States is offering much that is worthy in terms of rehabilitation(96-107); 15. A markedly increased number of books on all phases of rehabilitation(108-115) and occupational therapy(116-125) has become available; and 16. Occupational therapy has continued to make progress(126-148). Obviously, it is impossible to review each of the above cited publications. Only a few of the seemingly more important ones can be considered.

Even though no dramatic, new techniques of rehabilitation have been introduced during the past year, psychiatry is making real progress in its fight against mental illness. The number of patients in American mental hospitals decreased during 1959 for the fourth consecutive year even though admissions increased(149). These and other facts about mental health have been made available in a brochure published by the National Committee Against Mental Illness(150). Such authoritative figures support the statement of Dubois(1) that emotional and mental disturbances are the most extensive health problem of all and represent a challenge to every practicing physician. Terhune(2) says this challenge must be met not just by psychiatrists but by all physicians. The United States Government holds a similar belief as evidenced by the fact that the National Institute of Mental Health(3) is sponsoring courses in the psychiatric aspects of medicine for general practitioners and the U. S. Public Health Service(5) is formulating

long-term plans for increasing mental health facilities.

Kissen and Carmichael(9) review the subject of psychiatric rehabilitation. Their report includes important statistics, significant legislation and an excellent bibliography.

Simon(10) points out that the concept of psychiatric rehabilitation has broadened markedly during the last decade. He says that it is currently characterized by 4 trends: (a) "The therapeutic use of self"; (b) The "open hospital" and "therapeutic community" and their effect on hospital-community relationship; (c) The development of a variety of transitional agencies between the hospital and the community; and (d) The establishment of the mental hospital as a true "community hospital." Ebaugh(12) is pleased with these trends and advocates that community participation in mental health be enlarged and accelerated. Rockmore(13) says that careful planning is essential if such a program is to be successful. Such planning must include consideration of: the psychodynamics of the patient's problem(Unterberger, 14); arrangements for rehabilitation as early as possible in the patient's hospital stay(Bellak and Black, 15); the discharged patient's specific needs(Kasprowicz, 17); social factors(Kris, 18 and Walz, 19); and proper indoctrination and use of the family(Evans and Bullard, 20), the home(Friedman, Rolfe and Perry, 21) and foster homes(22). Linden, Appel, Davis and Matthews(23) discuss elements influencing the success of a public mental health program; Bloomberg(24) proposes a community-based hospital as a branch of a state hospital; Weinstein(25) describes successful day-care programs, and Carmichael(26), Fox, Rutter and Smith(27), Freeman(28), Bierer(29), Kramer(30), Gussen(31) and Steinman and Hunt(32) discuss the value of day hospitals. Drubin(33), Oliver(34), Holman(35) and Cleobury(36) voice words of caution about newer trends in psychiatric rehabilitation. Drubin(33) fears that such community-oriented facilities will care for only certain types of patients and that the more chronic and long-term cases will be placed at a disadvantage, while Oliver(34) assumes that community services are a device to save

money. However, Carmichael(26) says the day hospital has demonstrated that the rehabilitation potential of chronic schizophrenics has been greatly underestimated, and Freeman(37) emphasizes that community services are not inexpensive. Basham(42) reports that chronic, long-term patients profit from movement toward the community. Similarly, Rafferty(38) says that a day treatment structure is beneficial to adolescents.

These newer trends in psychiatric rehabilitation indicate that the function of the mental hospital is changing. Tallman(39) believes "that the state hospital is becoming and will increasingly become a place where hospital psychiatry of a professionally high standard will be practiced" and that the impetus for progress is coming from state hospitals. O'Neill(40) feels that treatment methods must be developed within the hospital and integrated with the community. He is concerned over the tendency in America to develop community mental health services separate from the hospitals. It is interesting to note parenthetically that the precursor of the modern mental hospital was in existence briefly in Sicily almost two hundred years ago(Mora, 41).

Work, as a factor in rehabilitation, has received particular attention recently. Jones(44) writes of the importance of choosing work tasks that meet the needs of the individual patient. He believes that not just work itself but the patient's ability to interact with other people and to accept authority are of importance in the rehabilitative process. Schossberger(45) gives an account of a successful work village for mentally ill persons in Israel. A Berkeley, California toy manufacturer has set up an assembly line with 20 employees, all with histories of past mental illness(47). Probably this is the first time a concern has employed a staff with an almost 100% record of past mental disorders. Hubbs(48), Denber(49) and Freudenberg(50) describe successful sheltered workshops. These authors stress that the element of economic gain is a significant factor in the rehabilitation of psychiatric patients. Wheat, Slaughter and Frank(51), in discussing vocational rehabilitation, emphasize that opportunities must be geared to the changing needs of the patient.

The importance of recreation in rehabilitation is emphasized in 4 papers on the subject by psychiatrists(52). Other accessory methods are reported to be important adjuncts in rehabilitation. Music(53), hobbies(54), ex-patients as volunteers(55, 56, 57), ex-patients' clubs(58), college students(59), the family doctor(60), the public health nurse(61) and self-help organizations(62) all can play a significant part in restoration.

Many programs for the ever-increasing number of geriatric patients(63) are being developed(64, 65, 66, 67, 68, 69, 70, 71), all of which center around finding new objectives and giving new meaning to the existence of the elderly. Similarly, special programs are being developed to expedite the recovery of adolescents and children(72, 73, 74, 75).

Close follow-up and counseling are assuming an increasingly important place in rehabilitation. Patterson(77) says that the relationship between the counselor and the patient is the most important factor in successful rehabilitation, while Hamilton(78) emphasizes the community role of the counselor. Bettag(79) expresses the hope that by 1965 there will be departments of rehabilitation in all state mental hospitals and schools.

As in previous years, the periodicals contain many publications dealing with the relief of emotional factors that obstruct rehabilitation of the physically ill. Visotsky(80) states that the patient must adjust to a new image of himself, and Whitehouse(81), Becker(82), Fishman(83) and Willard(84) stress the importance of psychological factors in physical disability. It is gratifying to know that the U. S. Civil Service Commission now considers epileptics employable under certain conditions(85).

Whitten(86) feels strongly that "rehabilitation of the future will be more individual-need-centered and less agency-centered than before," while Efron, Marks and Hall(87) compare the effectiveness of individual-centered and group-centered activity and conclude that there is no essential difference in effectiveness.

All sorts of research projects in methods and facilities for rehabilitation are being undertaken, prominent among which are

experimental efforts to rehabilitate schizophrenics(88, 89, 90, 91).

Conferences on rehabilitation have been frequent during the past year(92-95).

Trevethan(96) reports on rehabilitation internationally and Maclay(98) reviews the major provisions of the New Mental Health Act in England and Wales. This legislation is the result of an extensive study and gives expression to an entirely new way in which mental disabilities can be dealt with. Other contributions from the foreign scene are: from England a new type of wing on a mental hospital(99), a factory that employs only mental patients(101), and an authoritative report on open hospitals(102); from Sweden, a plan for 5 open hospitals(103); and from Australia an account of the rapid progress of the open door policy(104). Kalinowsky(105) describes Soviet psychiatry and emphasizes how it is centered around dispensaries and is outstanding in its organization and therapeutic activity. Klumpner(106) gives an account of a psychiatric hospital for children in Moscow. The reader is urged to study Laughlin's survey of psychiatry in 6 European countries(107) in order to achieve a better understanding of the work of his colleagues in foreign lands.

Eight new books and booklets dealing with various aspects of rehabilitation have come to this reviewer's attention during the past year. Of these, the work of Greenblatt and Simon is outstanding(108). They report on rehabilitation during hospitalization and the post-hospital adjustment period as discussed at a conference of authorities in psychiatry, medicine, and the social sciences. Kurtz(109), in *The Social Work Year Book of 1960* considers problems of the aging, mental health and vocational rehabilitation. Gelber(113) reports on a study made to identify the needs of discharged mental patients in relation to public health nursing functions. *Troubled People on the Job*(114) offers excellent advice to supervising personnel in industry.

Several books and manuals on occupational therapy also have been published recently. This reviewer has seen ten. A manual that takes statements and quotations from textbooks on occupational therapy(116) orients the reader toward total re-

habilitation. Objectives, methods and media of occupational therapy for use with individual patients are discussed. Psychiatrists and occupational therapists dealing with prevocational and vocational problems should read *Tower*, a book(117) which deals with testing, orientation and work evaluation in rehabilitation. The World Federation of Occupational Therapists has published the proceedings of its second international congress(120), which includes discussion of the role and contributions of occupational therapy in rehabilitation of the mentally ill. A new and particularly well illustrated textbook of occupational therapy with an excellent bibliography(122) describes many techniques for the management of psychiatric patients. Another new book deals with occupational therapy in pediatrics and shows how it can be used beneficially in children with different types of emotional problems(123).

Publications in periodicals during the past year that consider occupational therapy and psychiatry have not been unusually numerous. Conte(126) visualizes the future effectiveness of occupational therapy as depending on the psychotherapeutic role of the therapist. Anderson and Gordon(127) tell why overspecialization in occupational therapy is undesirable. Reilly(128), Fry(129) and Huntting(130) discuss various research potentialities of occupational therapy. Llorens(131) says that psychological test results are a valuable aid in planning occupational therapy goals of emotionally disturbed children. Roberts(135), Dixey, Haslerud, Niswander and Rutledge(136) and Deane and Dodd(137) describe occupational and educational techniques that benefit the chronic mental patient, while Farrell(138) and Elson(140) emphasize the importance of the workshop as a part of occupational therapy. Specific activities as tools of occupational therapy are considered by other authors(Krygar, 141—clerical work, Etheridge, 142—patient publications, 143—creative writing).

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CORRESPONDENCE

PSYCHIATRY AND ITS METHODS

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY :

SIR : Dr. Walter D. Hofmann, in his letter in the August issue of this journal, touches on an issue deeply disturbing all thoughtful psychiatrists. In the last 40 years a unique situation has arisen almost unchecked. Psychiatry has allowed itself to be built up without checking extravagant therapeutic and scientific claims, as would be a matter of course in other specialties. The words of Ganet, "anarchy and dogmatism reigns in psychiatry," are even more true today than half a century ago.

Much psychiatric literature is repetitive and unproved while important areas are neglected.

So many psychiatrists naively assume that their observations are necessarily valid, encouraged by Freud's ambitious notion that the psychoanalyst becomes an objective instrument of science merely by removing his emotional bias by being analyzed. His was a revolutionary concept. Unfortunately however, it proved wrong. By now, most analysts agree, as did Freud at the conclusion of his life, that training analysis fails to achieve its objectives; indeed, Glover thinks the longer the analysis, the greater the element of suggestion. But the conclusion that the analyst is not entitled to

scientific license merely by virtue of having been analyzed, has not yet been drawn.

At the other end of the scale are the "research" publications. As Dr. Hofmann rightly points out, merely calling something "research" does not make it so.

Perplexed by the overwhelming manifoldness of the material, too many researchers pick over-simplified tangible trite data for control experiments. Bleuler said that psychiatrists tend to describe not what is most significant but what lends itself most easily to being described. This is still more true of the hypotheses of many researchers.

We cannot transfer the approaches of one science to another. Psychiatry must develop its own methods. Pseudo-exactness is no substitute for intelligent clinical observation. Psychiatry has been seriously handicapped by the tremendous professional pressure to conform. This has dampened originality and even deterred many medical doctors from entering psychiatry.

Melitta Schmideberg, M.D.,
Director of Clinical Services,
APTO, New York, N.Y.

Dr. Hofmann comments that Dr. Schmideberg's counsel and caution are "worthy of emphasis."

Ed.

ABSTRACTIONS

Natural rights and natural liberties exist only in the kingdom of mythological social zoology.

—JOHN DEWEY

NEWS AND NOTES

CERTIFICATION IN CHILD PSYCHIATRY.—

The Committee on Child Psychiatry of the American Board of Psychiatry and Neurology, Inc. will conduct its next examination on February 6 and 7, 1961 in Chicago, Ill.

Applications for certification on record will be received up to September 21, 1961. All applications received after that date will be considered for eligibility for examination only.

All inquiries may be directed to: Dr. David A. Boyd, Jr., Executive Secretary-Treasurer, American Board of Psychiatry and Neurology, Inc., 102-110 Second Ave. S.W., Rochester, Minn.

AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY, INC.—The following candidates were certified as Diplomates in Child Psychiatry by this Board and its Committee on Certification in Child Psychiatry, March and October 1960.

MARCH, 1960

Finzer, William F., M.D., Pittsburgh, Pa.
Frank, Richard L., M.D., New York, N. Y.
Gilbert, Louis J., M.D., New York, N. Y.
Kaufman, Irving, M.D., Belmont, Mass.
Kaufman, S. Harvard, M.D., Seattle, Wash.
Lewis, Murray D., M.D., Rochester, N. Y.
Rabinovitch, Ruth, M.D., New York, N. Y.
Rapoport, Jack, M.D., New York, N. Y.
Rochlin, Gregory, M.D., Cambridge, Mass.
Sheimo, Stanton L., M.D., San Mateo, Calif.

OCTOBER, 1960

Adamson, William C., M.D., Rydal, Pa.
Altman, Sidney Irving, M.D., Philadelphia, Pa.
Belmont, Herman S., M.D., Elkins Park, Pa.
Bourg, Donald J., M.D., Denver, Colo.
Bucknam, Frank Gilbert, M.D., Hartford, Conn.
Burks, Henry L., M.D., Ann Arbor, Mich.
Call, Justin D., M.D., Los Angeles, Calif.
Caplan, Hyman, M.D., Montreal, Que.
Clements, C. Glenn, M.D., Cincinnati, Ohio.
Coda, Evis John, M.D., New Orleans, La.
DeMyer, Marian K., M.D., Indianapolis, Ind.
Gluckman, Robert M., M.D., Evanston, Ill.
Hayes, Marjorie, M.D., San Francisco, Calif.
Johnson, James A., M.D., Milwaukee, Wis.
Kohrman, Robert, M.D., Chicago, Ill.
Kraft, Irvin A., M.D., Houston, Tex.
Langdell, John Irving, M.D., San Francisco, Calif.

Littner, Ner, M.D., Chicago, Ill.

Lockett, Harold James, M.D., Northville, Mich.
Marten, George Wenceslas, M.D., Memphis, Tenn.

Mora, George, M.D., Providence, R. I.
Newman, Samuel J., M.D., Cincinnati, Ohio.
O'Connor, Robert Emmett, M.D., Madison, Wis.

Philips, Irving, M.D., San Francisco, Calif.
Plotsky, Harold, M.D., Washington, D. C.
Ragins, Naomi, M.D., Pittsburgh, Pa.
Robinson, James Allen, M.D., Buffalo, N. Y.
Rogers-Greenblatt, Gertrude, M.D., Newton, Mass.

Silberstein, Richard M., M.D., Staten Island, N. Y.

Solnit, Albert J., B.A., M.A., M.D., New Haven, Conn.

Stark, William, M.D., Washington, D. C.
Stewart, Ann Hoague, M.D., Denver, Colo.

Switzer, Robert E., M.D., Topeka, Kan.

Tec, Leon, M.D., Norwalk, Conn.

Tyler, Edward A., M.D., Indianapolis, Ind.

Weisner, Wayne M., M.D., Manhasset, N. Y.

Wright, Harold L., Jr., B.S., M.D., Northville, Mich.

Zucker, Joseph M., M.D., Providence, R. I.
Zuger, Bernard, M.D., New York, N. Y.

AMERICAN GROUP PSYCHOTHERAPY ASSOCIATION.—The Fifth Annual Institute of the Association will be at the Henry Hudson Hotel, New York City, January 25-26, 1961.

The theme is the Application of Group Psychotherapy in the Treatment of some Major Psychopathological Syndromes.

Registration fee is \$35.00 for members and \$50.00 for non-members (which includes luncheon January 25 and dinner January 26).

The 5th Annual Institute immediately precedes the 18th Annual Conference of the AGPA January 27 and 28, 1961, at the same hotel.

Advance registration is necessary. For full program write to: American Group Psychotherapy Association, Room 516, 1790 Broadway, New York 19, N. Y.

SEVENTH INTERNATIONAL CONGRESS OF NEUROLOGY.—This Congress will be held in Rome September 10-15, 1961, under the

auspices of the World Neurologic Federation and of the National Institute for Nervous Diseases and Blindness of Bethesda.

Information is available from the President of the Congress, Professor Mario Gozzano or from the Secretary General, Dr. Giovanni Alemà, Viale Università 30, Rome.

The fifth International Congress of Electroencephalography and Clinical Neurophysiology will be held in Rome September 7-13, 1961.

Information may be obtained from the President of the Congress, Professor Mario Gozzano, or from the Secretary General, Dr. Raffaello Vizioli, Viale Università 30, Rome.

THIRD WORLD CONGRESS OF PSYCHIATRY.

—At this World Congress to be held in Montreal June 4-10, 1961, it is expected that there will be a large attendance of psychiatrists from the 70 different countries with which the Organizing Committee has been in touch.

For the first time since the World Congress in Paris in 1950 there will be an opportunity to speak about the development of plans based on the broad advances that psychiatry has made in these last 10 years.

A social program is being arranged for the evenings, and there will be separate daily programs of entertainment for the ladies of the Congress and for children in 3 age groups (5-9, 9-12, and teenagers).

A travel agency, Thos. Cook and Son/Wagon-Lits, has been appointed, and inquiries about group travel should be made to the agency's offices.

Registration at a reduced rate is available until January 15, 1961. Thereafter the full registration fee will be charged.

Full information may be obtained by writing to: III World Congress of Psychiatry, Allan Memorial Institute, 1205 Pine Avenue West, Montreal 2, Canada.

PSYCHOANALYSIS.—"Kairos" and the Therapeutic Process will be the subject of a paper by Dr. Harold Kelman, Dean of the American Institute for Psychoanalysis, to be given on the evening of January 25, 1961, 8:30 p.m. at the New York Academy of Medicine, 2 East 103rd St., New York City.

("Kairos" refers to a crisis or turning

point. Dr. Kelman will define some of the techniques by which the happenings in this phase of the therapy can be utilized toward effecting a favourable outcome.)

THE MARY PUTNAM JACOBI FELLOWSHIP.

—The Women's Medical Association of the City of New York offers the Mary Putnam Jacobi Fellowship to a graduate woman physician, either American or foreign. The Fellowship of \$1,000 will begin October 1, 1961 for a period of one year. At the discretion of the Committee, an award of \$2,000 may be given biannually. The recipient of the Fellowship will be expected to make a report at the end of the 4th month following which the balance will be awarded, subject to the approval of the Committee. The Fellowship is given for medical research, clinical investigation or postgraduate study in a special field of medicine. The recipient is expected to devote full time to the Fellowship, but exception may be made under special circumstances.

Applications may be obtained from Ada Chree Reid, M.D., Chairman, 118 Riverside Drive, New York 24, N. Y., and must be returned before March 1, 1961. Successful candidates will be notified not later than May 1, 1961.

BIBLIOGRAPHY ON SEX OFFENDERS.—The Division of Legal Medicine, Department of Mental Health, Commonwealth of Massachusetts, is compiling a bibliography on sex offenders and sex offenses. We would appreciate your forwarding to us any material consisting of articles or unpublished papers in this area. Please address your contribution to Norman A. Neiberg, Ph.D., Director of Psychological Research, Division of Legal Medicine, 33 Broad Street, Boston, Massachusetts.

GRADUATE COURSE IN CRIMINOLOGY, UNIVERSITY OF CAMBRIDGE.—The University of Cambridge has established a Post-Graduate Course in Criminology, to be given by the Institute of Criminology, and leading to a diploma, beginning in 1961. Each year the course will extend from October to July.

The programme will include 105 lectures and 90 seminars, dealing with all the major

aspects of criminology, criminal law and procedure. Individual work will be required at the seminars.

Instruction will be given by Dr. Radzino-wicz, the Wolfson Professor of Criminology, and staff, and by visiting lecturers, and experts from the Home Office.

Application forms for admission to the course are available from the Secretary, Institute of Criminology, 4 Scroope Terrace, Cambridge, England, and must reach the Secretary not later than March 15, 1961, for the course commencing in October.

TRAINING FELLOWSHIP IN NEUROANATOMY AND NEUROPHYSIOLOGY.—New York University Medical Center is offering a 3-months Training Fellowship with stipend of about \$1,000 in Neuroanatomy and Neurophysiology, beginning March 1, 1961. Candidates holding the M.D. or Ph.D. degree and interested in teaching or research in these subjects are eligible. Applications should be in by February 1, 1961. For information apply to: Dr. Louis Housman, Dept. of Anatomy, New York University Medical Center, 550 First Avenue, New York 16, N. Y.

CORRECTION

There were several typographical errors in our article "Contemporary Conversion Reactions: A Clinical Study," published in the April, 1960 issue of the *Journal*. The more serious error concerns the footnote on p. 906, the formula used to test the birth order and developmental role hypotheses. The formula with which we computed X^2 , with one degree of freedom was

$$\frac{\left[\sum \left(r_i - \frac{n_i}{i} \right) \left(\frac{i^2}{i-1} \right) \right]^2}{\sum \left(\frac{i^2}{i-1} \right) (n_i)}$$

The first term in the numerator was erroneously published as

$$\left(\frac{r_i - n_i}{i} \right)$$

This formula was derived from the one to the left of it, and there should have been an = sign between the two. Also, on the same page, column 2, line 18, $.05 < p < .01$ should obviously have been $.05 > p > .01$.

Frederick J. Ziegler, M.D.

WELFARE STATE

He who depends upon the state for protection, must pay for it by limitations on liberty. By every new demand which he makes upon his government, he increases its function and the burden of it on himself.

—WILLIAM GRAHAM SUMNER

BOOK REVIEWS

FROM THE DEATH-CAMP TO EXISTENTIALISM.

By Viktor E. Frankl. Translated by *Isle Lasch*. Preface by *Gordon W. Allport*. (Boston: Beacon Press, 1959, pp. 111. \$3.00.)

This book presents "A Psychiatrist's Path to a New Therapy." The author, Professor of Neurology and Psychiatry of Vienna University, was a prisoner in 4 Nazi concentration camps. This horrifying experience affected his psychotherapeutic orientation and led him to formulate "logotherapy," hailed by Allport as "The Third Viennese School of Psychotherapy." Using flashbacks, Dr. Frankl describes his 3 years in these camps and finally, in Part Two, formulates the basic principles of his theory. Originally published in German, this book is so remarkably transcribed and skilfully put together that one is barely aware of reading a translation.

The work has undeniable literary value and is also interesting from the psychological standpoint. Events evoked are so accurately caught they will be familiar to all ex-prisoners of Nazis. Descriptions of atrocities, indignities, and horrors prisoners constantly endured awaken deep sympathy and pity for the victims. These feelings tend to woo one to accept some of Dr. Frankl's theoretical conclusions.

In my opinion, our survival in camps was due to a combination of such factors as physical resistance, the degree of sharing in social relationships (lone wolves die early), and pure luck. Not always able to take an overall view of the situation, we tried hard to survive the way we knew best—the way we had learned, implicitly or explicitly, in the past. In retrospect, survival itself seems miraculous. No wonder survivors are tempted to believe their "recipes" have universal value—a mystic key to all of life!

Dr. Frankl's key is, in effect, Nietzsche's statement: "He who has a *why* to live can bear with almost any *how*." For him this is "a motto for all psychotherapy and education." From this sweeping generalization, he supplies his patients' lives with "meaning." I quote: "For, ultimately, man should not ask himself 'What is the meaning of my life?' but should, instead, realize that it is not up to him to question—it is he who is questioned by life; it is he who has to respond—to be responsible."

We know nothing about Dr. Frankl's pre-camp life or previous orientation. We know

what he went through and where he arrived. But, where did he start from? Is the journey an illusion? Did some metaphysical beliefs, implicitly held, become explicit?

I observed in camps that the sanity of some intellectuals was threatened not so much by cruelty and abuse as by the senselessness of their existence. They felt themselves above people living from day to day, who were supported by a simple, blind faith, and yet they themselves craved certainty; too "sophisticated" to harbour a candid faith, they sought certainty in teleology. I was amazed to hear in camps many educated people expounding irrational theories which even illiterates would not consider seriously. These were intellectuals who had relied on their elevated social position for security. As long as their status was recognized and respected, they felt that it was their "manifest destiny" to occupy their social position. Suddenly, in the camps, they were stripped not only of their social advantages but of the very prerogatives of human condition. The latter loss was easier to take since the misery was general. The loss of status, in contrast, threatened their self-esteem by hitting them individually. Once set apart, their natural attempts to salvage their "dignity," to retreat into reminiscence of the past were unwittingly permeated by their longing for the lost social supremacy. Little wonder that their strivings to escape the dreary reality were frequently misconstrued, mocked, and squelched by their fellow prisoners. Experienced as "uniqueness," isolation became bearable. Perhaps this answers Dr. Frankl's query why his quest for "dignity" was frequently resented by his camp-mates as a superior attitude. Hurt by their contemptuous and brutal reactions in addition to the general cruelty of the S.S. and Capos, he was unable to remain "unique" in the material world and took refuge in fantasy and metaphysics. There had to be a hidden, higher meaning to his misery and his very suffering made him unique.

For instance, he reports that, when suffering from extreme pain, he became disgusted with the situation and fancied himself giving a lecture on the psychology of the concentration camp to an attentive audience in a warm and well-lit lecture room. "By this method, I succeeded somehow in rising above the situation, above the sufferings of the moment, and I observed them as if they were already in the past." It seems obvious that Dr. Frankl, prevented from normal social interaction, obtained

it in fantasy. Lecture has no meaning outside of social terms. It was never really the abstract meaning of life that helped him out. It was always a concrete social experience.

Dr. Frankl wants us to believe that the world is one huge concentration camp and impotence is our prevailing condition. He preaches fatalism under the guise of "NOETIC," neo-platonic philosophy.

He is discarding reason because it failed to provide him with certainty. He seems to be unaware of the revolution which the theories of Quanta, Relativity, and the Principles of Indetermination of Heisenberg produced in our understanding of the role of scientific reason. It is the most powerful tool of investigation available to man but it is not meant to provide certainty. On the contrary, results have meaning only in operational terms and are always only provisional.

The quest for certainty does not properly belong to the scientific domain. Certainty may alleviate the individual's anxiety and therefore help him mobilize his energy against adversity. But it is intelligent action only which solves problems.

Rational and objective examination of the horrors of the concentration camps can be only undertaken in a social and historical perspective. The findings cannot fail to make us more aware of our social responsibilities. Nietzsche, of whom Dr. Frankl is so fond, believed that man's destiny is determined by his own acts. Another existentialist, Sartre, states that it is up to us to give a social meaning to our lives. One wonders if Dr. Frankl is aware that life has social meaning other than status consciousness?

The inconsistencies of his philosophy do not depreciate his often admirable behaviour in camps nor do they belittle his psychotherapeutic ability. But the fact that he can help his patients does not necessarily prove the superiority of "logotherapy." I think he helps them by making their life more related to society at large. The concomitant belief in absolute meaning and uniqueness of their lives does not improve the result. On the contrary, by making them less socially active, he also makes them potentially more vulnerable.

M. D. REJSKIND, M.D.,
Regina Mental Health Clinic,
Regina, Sask.

PSYCHOSOCIAL PROBLEMS OF COLLEGE MEN.

Edited by Bryant M. Wedge. (Yale University Press, 1958. \$6.50.)

This collection of articles based on research and clinical experience by members of the

Division of Student Mental Hygiene of the Department of University Health at Yale University argues persuasively for considering "The College Age" a critical period for personality development. The multitude of influences brought to bear upon the individual at this age is reflected in the range of viewpoints represented in the chapter headings: The Psychosocial Position of the College Man; Satisfaction and the College Experience; Personality and Academic Achievement: A Questionnaire Approach; Clinical Study of Academic Underachievers; Leaving College because of Emotional Problems; An Investigation of Personality Differences Associated with Competitive Ability; Further Observations on Competitive Ability in Athletics; Who Uses a College Mental Hygiene Clinic; Group Psychotherapy with College Students; The Borderline Patient in the College Setting; Fear of Homosexuality in College Students; Identity Diffusion and the Synthetic Function; The Relationship of Intellectual Achievement to the Processes of Identification; and Treatment of Idiosyncratic Adaptation in College Students.

BERNARD LUBIN, PH.D.,
Indianapolis, Ind.

A POLYCHROME ATLAS OF THE BRAIN STEM.

By Wendell J. S. Krieg. (Evantson, Ill.: Brain Books, 1960. \$3.00.)

This small atlas of sectional drawings of the brain stem by the author consists of a set of illustrations of Weigert sections, in which each fiber is rendered in a code color, matched in opposite page to sections stained to demonstrate the neural cell bodies printed in blue to simulate the appearance of Nissl stain. This simultaneous presentation of the illustrations would enable the student to grasp and visualize the complex anatomical details of this important part of the brain. The text is brief and the quality of the illustrations confirm the artistry of the author.

J. BEBIN, M.D.,
Henry Ford Hospital, Detroit.

NATURAL SELECTION IN HUMAN POPULATIONS.

Edited by D. F. Roberts and G. A. Harrison. Symposia of the Society for the Study of Human Biology, vol. 2. (New York: Pergamon Press, 1960, pp. 76. \$3.00.)

A most stimulating symposium of the action of natural selection, mainly genetic, on human populations. Professor L. S. Penrose writes on "Natural Selection in Man: Some Basic Problems," Dr. A. R. G. Owen gives a most interesting account of new "Mathematical Models

for Selection," Dr. C. A. Clarke writes on "The Relative Fitness of Human Mutant Genes," Dr. P. M. Sheppard on "Natural Selection and Some Polymorphic Characters in Man," Professor Th. Dobzhansky on "Selection of Gene Systems in Natural Populations," and Dr. E. H. Ashton on the "Rate of Change in Primate Evolution."

The variability of man in all his varieties, once a fertile field for conjecture, is a problem which is now yielding to the investigative and analytic skills of a host of gifted workers. The present volume represents a short and highly readable account of the work that has been and is being done in this important field.

ASHLEY MONTAGU, PH.D.,
Princeton, N. J.

THE HOMOSEXUAL IN AMERICA. By *Donald W. Cory.* (New York: Castle Books, 1960, pp. 334. \$6.00.)

After living a quarter of a century as a homosexual, the author presents his reflections on the homosexual in America. The topics discussed are sociology, psychology, patterns of behaviour, culture, types of adjustment and outlook in their relation to homosexuality. Appendices contain extracts from statutes dealing with homosexual offenses, and an extensive non-medical bibliography.

The author advertises his book as "Subjective Approach." It is really autobiographical and a plea for greater tolerance of the homosexual. It contains little that is not known to psychiatrists. Its purpose is disclosed in "this book was addressed to all the gay people in America."

GEORGE W. HENRY, M.D.,
Greenwich, Conn.

ETIOLOGY OF SCHIZOPHRENIA. By *G. U. Malis.* (Government Publications of Medical Literature (Medgiz), Moscow, 1959, pp. 224, price 8.40 rubles (Russian).)

In the past generation we have seen so many dragons slain by the St. George's bearing the emblem of Aesculapius that we are led to believe that all our medical ills will yield to the

sharpened spears of the scientist. We have seen consumption proven to result from the bacillus of Koch, malaria to be caused not by the miasma of the swamp but by the organism of Laveran, what was formerly a sort of mania (dementia paralytica) to result from the spirochete of Schaudinn. Since the birth of microbiology, there have been repeated attempts to marshal evidence that schizophrenia is due to a toxin, infection, or metabolic dysfunction. Among such endeavors have been Papez with his intracellular vibrios, more recently Heath and Company with their taraxein. Yet schizophrenia remains the Erlkönig of the psychiatric world, for it has never been accepted in spite of these myriad efforts that there is a specific toxin or a specific histology responsible for the mental symptoms.

Had we not suffered so many frustrations in the past in following the will-o'-the-wisp of schizophrenic etiology, this logical exposition of Professor Malis³ would convince us that at the basis of schizophrenia are toxic substances probably arising from a virus infection. The 7 chapters of this interesting book describe the characteristics of schizophrenic blood; the effect of this blood on the growth of tadpoles; the effect on the isolated heart of the frog; the toxic substances obtained from schizophrenic blood; the phytotoxic properties; the origin of these properties and their infectious nature; the virus factor in the pathogenesis of schizophrenia. The bibliography contains about 200 Russian references and upwards of 150 non-Russian. The experiments, most of which have been carried out by Malis in the past decade or so, are reported factually along with their controls, and although there is wide variation between the effects from different groups of schizophrenics, the difference between controls and patients is often very impressive. The language is in a clear Russian style.

If one finds himself transported by enthusiasm with these Russian experiments, he should as an antidote read the critical evaluation of Kety in *Science*, June 5 and 12, 1959.

W. HORSLEY GANTT, M.D.,
Baltimore, Md.

IN MEMORIAM

WILLIAM GORDON LENNOX

1884-1960

Dr. Lennox was born in Colorado Springs and always had a love of the west; in later years he spent many vacations in Texas where he was chairman of the board of the Elsinore Cattle Company of Fort Stockton. His early interest, however, was in medical missionary work and to this end he applied in 1909 (after graduation from Colorado College) to the Boston University School of Theology. He was denied admission because of his deficiency in Greek and Hebrew! He then turned to Harvard Medical School where he received the M.D. degree *cum laude* in 1913. While at Harvard he married Emma Buchtel (daughter of the Chancellor of Denver University and one-time governor of Colorado). Two daughters were born; one of them is now Mrs. H. B. Jansson of Maryland; the other is a doctor of medicine, Margaret Lennox-Buchthal of Denmark, who assisted in the writing of *Epilepsy and Related Disorders*.

After three years of hospital work, mostly at the Massachusetts General, Dr. Lennox went to Peking. The first year was spent in learning to speak Chinese and the next three years in the newly organized Rockefeller Medical School and hospital—four stimulating and satisfying years. In 1921 he wrote a thesis at the University of Denver on "A Study of the Health of Missionary Children" and received a Master of Arts degree. He then moved to Boston and began the fulltime task, in the Department of Neuropathology at Harvard, of trying to find out something about the origin and the treatment of epilepsy. This search continued for 33 years in association with various collaborators—at first with Stanley Cobb, H. G. Wolff and Hallowell Davis, but most productively with Dr. and Mrs. F. A. Gibbs. This trio worked as a unit for 11 years until 1945. Of the 241 medical publications that bear the name of Lennox, 28 were in collaboration with one or both of the Gibbs. Throughout 14 years there was continu-

ous support of the research by the Rockefeller Foundation.

Dr. Lennox was a member of many professional societies, and president of the Boston Society of Psychiatry and Neurology, of the Association for Research in Nervous and Mental Diseases, and for 14 years president of the International League Against Epilepsy.

Teaching appointments were in the medical departments in the Peking Union Medical School and Harvard Medical School, where he became Associate Professor of Neurology. Hospital assignments were successively at the Massachusetts General, Peter Bent Brigham, Boston City, Boston Psychopathic Hospital and lastly the Children's Medical Center as Chief of the Seizure Division.

No physician has more successfully dedicated himself to the study of one disease than has Dr. Lennox. It was characteristic of him to be thorough, courageous and persistent. First he did 5 years of spade work in the library and clinic bringing out (with S. Cobb) his first monograph "Epilepsy" in 1928. Then he moved on to more original and exciting fields. First he took up the study of cerebral circulation, and then in 1934 he saw the promise of electroencephalography and began work with Hallowell Davis. With the help of the new techniques of EEG the whole field of research in epilepsy moved ahead rapidly. Collaborating with Gibbs and many other colleagues, important contributions were made in therapy, genetics, etiology and social work. In 25 years the treatment of the epileptic patient and the understanding of his problems were miraculously improved.

Dr. Lennox was president of the Association for Research in Nervous and Mental Disease in 1946. Hundreds of letters came in congratulating him and sending financial aid to this work. At the December meeting

Wilder Penfield truly said : "This is a spontaneous, enthusiastic tribute from epileptics and from members of his own profession ; a tribute to a physician who is a scientist, a scholar, an historian and organizer ; a man,

above all, whose unfailing kindness has endeared him to his fellow man, to his colleagues and to the sufferers in his chosen field."

Stanley Cobb, M.D.

THE CURRENT STATUS OF ARMY PSYCHIATRY¹

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INTRODUCTION

At periodic intervals since World War II, there have appeared authoritative reports on the current status of Army psychiatry. In 1948 and 1951, Caldwell(1, 2) reviewed the problems of Army psychiatry following World War II. Glass in 1953(3) and Peterson in 1955(4) described the operation and results of the Army combat psychiatric program during the Korean War. In 1956 Allerton and Peterson(5) surveyed 5 years of preventive psychiatry effort provided by Mental Hygiene Consultation Services which had been gradually reestablished with the onset of the Korean conflict. This presentation will report on another 4 years of the Army psychiatric program (1956-1960) and its further progress towards preventive orientation and practice.

It should be recognized that the conceptual framework and operational techniques as presently employed in the Army psychiatric program are a direct outgrowth of experiences with acute emotional disorders in World War II and the Korean conflict. Under conditions of wartime situational stress it became apparent that adjustment and military effectiveness were the complex resultant of multiple factors. The entire milieu of the soldier seemed to be involved which, in addition to the intensity of danger or deprivation, included motivation, cohesiveness, and other morale aspects of the group, the attitudes and strengths of buddies, the competency of leaders, the efficiency of communication, the adequacy of training, the degree of physical fatigue, the quantity and quality of supplies and weapons and even the medical criteria and disciplinary penalties for removal from the

stressful situation. Personality configuration as a behavioral determinant while significant was rarely decisive and in most cases of less importance than situational and social forces. Indeed the frequency of emotional disorders seemed to be more related to the characteristics of the group than the character traits of the individual. It was this awareness of non-effective military behavior, as a more common result of difficulties in the environment and interpersonal relationships of the soldier than manifestations of individual psychopathology which has been responsible for a gradual displacement of psychiatric personnel from their usual role and location in a hospital and clinic setting to the military community. This field approach has permitted a more realistic observation of the maladjustment process; brought psychiatric personnel into a working relationship with military supervisors; and has made possible the utilization of milieu as a major instrument in the development of techniques for prevention and treatment. As a result, the Army psychiatric program has been developed in the following three areas of endeavor.

1. Primary Prevention: Attempts to favorably influence the conditions under which soldiers may live, work or fight so that there is less likelihood of disabling maladjustment.

2. Secondary Prevention: The early recognition and prompt management of emotional or behavioral problems on an outpatient basis while the individual, still a member of his unit, struggles to cope with his environment or situation.

3. Tertiary Prevention: The employment of milieu as the principal therapeutic tool for persistent and severe mental disorders who require hospitalization. This technique, still exploratory and in the research stage, was designed to reduce chronic disability and produce a sufficient degree of rehabili-

¹ Read at the 116th annual meeting of the American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

² Office of the Surgeon General, Dept. of the Army, Washington 25, D. C.

tation so that favorable cases can be returned to effective military duty.

In recent years, including the period covered by this report, Army psychiatry has expanded those procedures and methods that may be profitably applied in the foregoing several areas of preventive psychiatry which have come to include disciplinary problems as well as symptom disorders. The objective of Army psychiatry has become the reduction of non-effective duty performance due to psychological reasons regardless of manifestations.

PRIMARY PREVENTION

In the area of primary prevention, the staff advisory function of the military psychiatrist is of paramount importance. Experiences indicate that the effectiveness of the psychiatrist in this role cannot be equated with the merit or excellence of his recommendations. More important is the quality of the relationship established by the psychiatrist with commanders and other supervisory personnel which to a large extent determines whether his suggestions will receive favorable consideration. Generally this relationship develops as a result of the activities of the psychiatrist in his professional management of referred problems. Unrealistic recommendations for special handling or assignment without reference to the practical limitations of the military situation or the forwarding of psychiatric reports replete with professional jargon produce a negative impression and the psychiatrist is judged accordingly. On the other hand, the psychiatrist who not only displays professional skill in the management of individual cases but renders decisions and recommendations which are meaningful and relevant from a military standpoint becomes highly regarded as a medical officer "with his feet on the ground." The psychiatrist, new to the service, cannot hope to achieve such military sophistication by limiting his professional activities to a traditional office or hospital practice. In order to acquire this background knowledge he must acquaint himself with the military environment, its rules, regulations, culture, mores and operational procedures by frequent visits to various post

or unit activities usually in connection with individual case referral.

When the psychiatrist establishes a favorable advisory relationship with military leaders a usable channel of communication is created for the transmission of psychiatric, psychological, and sociological information. This communication mechanism has been utilized as an instrument of primary prevention by psychiatric personnel as follows :

Firstly, there is the impact upon the involved non-commissioned and commissioned officer when the psychiatrist deals effectively with an individual case. These military supervisors are comparable to the so-called "caretakers" of civil life(6) occupying a role much like that of a foreman or teacher, or even a parent. Thus they are in an optimum position to exert a favorable influence upon the adjustment of subordinates. When military supervisors are afforded an opportunity to better understand the underlying causes of deviant or neurotic patterns of behavior, they often become more knowledgeable in the management of personnel as well as more efficient in the early recognition of maladjustment problems.

Secondly, there is the more direct employment of the military psychiatrist staff advisory function aimed at changes of rules, directives and regulations. Psychiatrists assigned to a major headquarters are concerned with personnel policies such as selection criteria for induction or enlistment, assignment limitations, medical and administrative standards for retention and discharge and procedures for the rehabilitation or elimination of individuals who exhibit deviant behavior. At the level of post headquarters and operational units, the psychiatrist submits recommendations which are relevant to local problems such as the early recognition and correction of disciplinary offenders, maladjustment of trainees, accident prevention and morale difficulties of particular units. An invaluable tool for the military psychiatrist at all levels and one which offers impressive evidence to commanders is the epidemiological approach. By this technique the psychiatrist can demonstrate significant differences in the incidence of non-effective behavior among units

of a post or division who are apparently exposed to the same environmental hazards and hardships. These data raise questions which inevitably focus attention of senior commanders upon the important areas of leadership or situational circumstances which could account for such differences among units.

SECONDARY PREVENTION

Secondary prevention, or the doctrine of early identification and prompt treatment received its major impetus during World War II when Army psychiatrists were confronted with a vast number of acute and apparently disabling emotional disorders. Hospitalization was repeatedly demonstrated to have little or no beneficial influence. For this reason psychiatrists, both in oversea theaters and in the United States, spontaneously moved to establish outpatient psychiatric units near troop concentrations. Out of these experiences were evolved the secondary prevention techniques of Army psychiatry as exemplified by the current practices of the Mental Hygiene Consultation Service which has become a permanent facility on most Army posts in the United States and an integral component of the medical service of all oversea divisions.

The Post Mental Hygiene Consultation Service is located near the troop population. It functions as an operational center from which personnel accomplish assigned tasks in the field. The staff consists of psychiatrists, officer social workers and clinical psychologists, enlisted social work and psychology assistants, and supporting clerical personnel. To insure continuity of patient care the senior psychiatrist of the Mental Hygiene Consultation Service is also in charge of the relatively small psychiatric inpatient service of the local Army hospital. Referrals are derived mainly from unit commanders and post dispensaries.

In recent years the operational practices of Mental Hygiene Consultation Services have undergone a gradual but definite change in the direction of a so-called field service approach(7). Particularly in basic training centers and other large posts there have been developed techniques of sending field workers, usually mature enlisted social work assistants, to interview the referred

soldier in his unit area. This intake procedure avoids the usual clinic atmosphere and its suggestion of illness or accentuation of dependency needs, prevents the excess loss of training or duty time and facilitates the gathering of collateral information from others, particularly military supervisors. It has also been found that the soldier in his own surroundings can discuss personal and situational problems more freely with another enlisted man than in the usual intake interview accomplished at the clinic building.

The enlisted social work assistant is given instruction in this peripheral or milieu approach, preparatory to his field assignment. Further training includes working with an experienced enlisted field social worker prior to assuming responsibility for handling referrals. The enlisted field worker endeavors to identify the salient features of the adjustment problem which includes the gathering of pertinent collateral information. Then he discusses the case with his supervisor, usually a social work officer, concerning the further exploration and management of the problem. One Mental Hygiene Consultation Service on a large basic training post utilizes group therapy as the preferred method of further treatment. Therapy groups have been established in each training regiment which are conducted by a social work officer with an enlisted field worker serving as a recorder. Other Mental Hygiene Consultation Services mainly employ individual counseling by a social work officer or an experienced enlisted field worker supervised by a professional officer of the clinic staff.

The social work staff's handling of routine referrals permits the psychiatrist to function as a consultant for the difficult, or controversial cases. In addition, the psychiatrist evaluates at the clinic those individuals who present suspected organic disease, psychotic or severe neurotic symptomatology, and problems of serious administrative consequence. The psychiatrist takes every opportunity to discuss individual case referrals with the appropriate unit commander by phone or preferably in person rather than rendering formal written reports.

The operational practices and thus the

effectiveness of the Mental Hygiene Consultation Services are influenced to a large extent by the psychiatrist's assertive leadership, confidence and experience with the field approach. As the leader of the clinic group the psychiatrist frequently meets informally with his staff to discuss policies and specific problems. He conducts case seminars and takes other occasions to educate and train his staff in the use of techniques appropriate to their development.

In order to prevent the recidivism of military offenders, stockade⁸ screening techniques initiated on several posts (8, 9), were later elaborated into an Army-wide program through the combined efforts of the Office of The Surgeon General and the Office of The Provost Marshal General. In this program Mental Hygiene Consultation Service personnel make regularly scheduled visits to the stockade. Each new prisoner is interviewed by an enlisted social work assistant who also gathers pertinent collateral information whenever possible. Equipped with this intake data and the observations of confinement personnel, the social work officer interviews each case and in consultation with the psychiatrist makes recommendations to the confinement officer concerning clemency or parole. The psychiatrist interviews all prisoners who are considered to present serious or unusual problems in behavior and all prisoners who are deemed unsuitable for further military service. In the latter case the psychiatrist renders an appropriate recommendation for administrative discharge. Prisoners restored to duty are given assistance by the field social work personnel with problems of unit reintegration. Mental Hygiene Consultation Service personnel meet periodically with the confinement staff to discuss techniques, attitudes, and other measures which may enhance the correctional atmosphere of the stockade.

Experience with the stockade screening program has shown that by the time the soldier was involved in sufficient difficulty to require confinement, often he had de-

veloped fixed, deviant patterns of behavior and was neither interested in, nor amenable to, corrective measures. It seemed reasonable then, to devise a method of aiding these individuals at an earlier stage of their maladjustment. Since few soldiers are confined as the result of their first court-martial, this event has been utilized as a means of recognizing the early identification of the problem soldier and require psychiatric evaluation and possible treatment at this time. This procedure is gradually being implemented on many posts in the United States with the endorsement and cooperation of the local post commander. In this first court-martial screening program, personnel of the Mental Hygiene Consultation Service function in a manner similar to the stockade screening effort as described above.

TERTIARY PREVENTION

Timely and aggressive intervention aimed at "heading off" the development of chronically disabling states has long been one of the major prerogatives of preventive medicine. Army psychiatry, well aware of the significance of such tertiary preventive measures, has added research projects, designed to come to grips with this problem, to its already broad program conducted at the Walter Reed Army Institute of Research under the direction of David McK. Rioch (10).

Early in 1956, one of the authors, Lt. Col. Kenneth L. Artiss, M.C., was assigned to Walter Reed Army Institute of Research to investigate the potential value of milieu therapy as an adjunctive measure to the already established treatment procedures then in use at Army psychiatric treatment centers. To thoroughly test the method it was decided to use acutely schizophrenic soldiers as subjects.

A ward at Walter Reed General Hospital was provided, beds removed until only 10 remained. It was staffed by one physician, one nurse, 12 to 14 neuropsychiatric technicians (corpsmen or attendants) for the 24 hour care of 8 to 10 acutely schizophrenic soldiers. A comprehensive feedback type of reporting system was established, using verbatim notes, tape recordings and

⁸ The Army stockade is a confinement facility for the incarceration of military personnel who have committed relatively minor offenses. In contrast, the Army disciplinary barracks normally provides for the confinement of the more serious military offender.

a high level of intra-staff communication as its main tools (11).

In the 3½ years of operation, this Milieu Therapy Unit, limiting itself to 6 months or less of treatment, has returned 64% of its treated patients back to military duty. While long-term follow-up information has not as yet been completed, initial surveys indicate that over-all results may turn out as encouraging as the percentage of patients returned to duty. Since these results were obtained with no specific attention paid to criteria of treatability and by a pilot-project staff, further exploratory work is being undertaken to determine the effects of selection of patients, selection and training of staff members, and staff intercommunication systems. Another pilot-type ward has been in operation at Valley Forge General Hospital for well over one year.

In order that information obtained from the patients during treatment could be evaluated in terms of relevancy to present change as well as past history, two separate investigative teams were used concurrently; one team conducted tape recorded interviews with fellow squad members and work associates of the hospitalized soldiers, and the other team visited the home, community, and school for definitive data. Through the use of this method it has been demonstrated (12) that the schizophrenic symptom may be used as an informative and communicative device; and that, furthermore, analysis of its social usage may contribute heavily towards understanding the "major message" by the use of which the patient deals with his society in a goal directed manner, having specific aims in view.

Group movements, group values and group processes contribute significantly to the discrete momentary behavior of the individual. Such a statement as this may now be successfully defended by reference to the accelerated accumulation of research findings in social psychology during the past 30 years (13); by the experiences of combat psychiatry (14); as well as by the findings of multi-disciplinary research in social psychiatry (15) during the past decade. Milieu therapy draws from all these sources in addition to some more definitely therapeutic endeavors of recent years, such as those of

Harry Stack Sullivan at Sheppard and Enoch Pratt Hospital (16), Maxwell Jones in England, and Harry A. Wilmer with Navy personnel.⁴

The basic philosophy used by the treatment unit appears to contain three major elements:

1. *The schizophrenic can be understood.* This is to say that if enough trained people work with him closely enough and correlate their observations, his "major message" will become clarified and his behavioral goals known.

2. *Understanding him helps him.* This is to say that "being understood" is a major step in the direction of successful group or social living—in that it leads to relatedness (17).

3. *Working with others is a therapeutic (learning) experience for him.* This is to say that his previous attitudes have prevented his smoothly learning social skills—operationally he is found to be socially infantile and to "recover" must accumulate role-taking abilities in groups, just as others do.

This treatment group which includes staff and patients, has a message for its single patient members which is as follows: "your problems are my problems, and my problems are your problems; we'll not abandon each other." At first glance this message may seem unrelated to combat psychiatry but upon closer inspection it serves to remind us of one of the significant lessons learned from wartime stress relative to the supportive impact of group cohesiveness.

RESULTS

The rates indicated in the statistical data to be discussed below express the incidence of phenomena as they occur in a thousand troops during a given calendar or fiscal year.

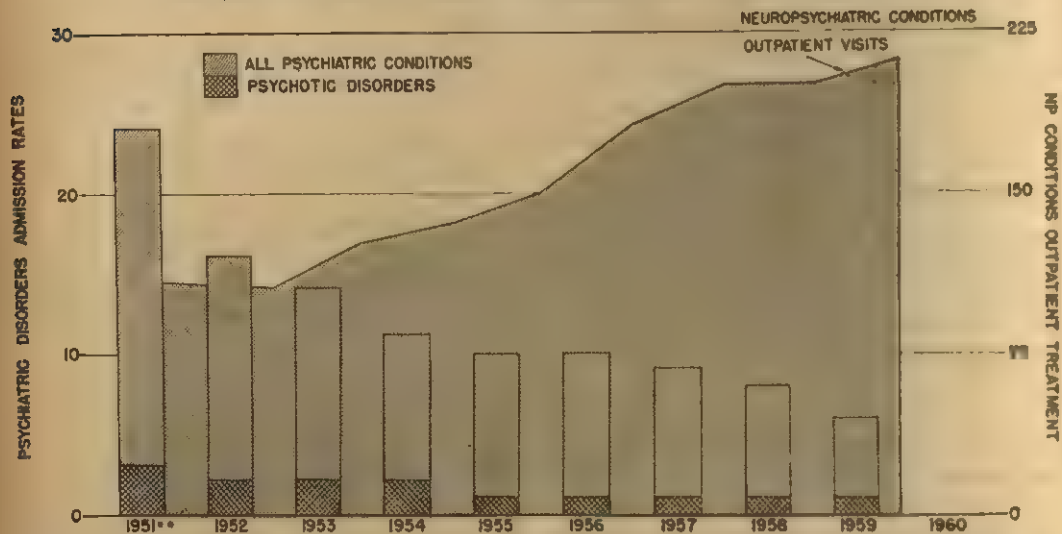
Chart 1 portrays a decreasing rate of psychiatric hospitalization⁵ during and since the Korean War coincident with a steady increase in outpatient psychiatric treatments. This chart, previously reported by Allerton and Peterson (5) on the basis of results up to and including the year 1955, illustrates an additional 4 years of experi-

⁴ For a more complete bibliography see Reference 12, pp. 38-39.

⁵ Includes individuals admitted to quarters and excused from duty for more than 24 hours.

CHART 1

HOSPITAL ADMISSION RATES AND OUTPATIENT VISITS' RATES PSYCHIATRIC CONDITIONS, PER 1000 TROOP STRENGTH PER YEAR FOR ACTIVE DUTY ARMY PERSONNEL WORLD WIDE



*PRIOR TO JULY 1956, DATA REPRESENT THE NUMBER OF TREATMENTS ADMINISTERED BY ARMY TREATMENT FACILITIES FOR NP CONDITIONS PER 1000 AVERAGE STRENGTH PER YEAR. BEGINNING WITH JULY 1956, DATA REPRESENT THE NUMBER OF VISITS TO ARMY MEDICAL TREATMENT FACILITIES FOR NP CONDITIONS. INCLUDES A CONSTANT, APPROXIMATELY 2% ADMIXTURE OF NEUROLOGICAL CONDITIONS.

**OUTPATIENT DATA FOR 1951 ARE FOR THE PERIOD JUNE-DECEMBER ONLY

ence with secondary prevention during a peacetime era. It should be noted that total psychiatric admissions declined to 7 per thousand per annum in 1959, the lowest rate of a 22-year period (1938-1959) for which comparable statistical data are available (18). However, admissions for psychotic disorders have been less affected. Apparently extramural management has not been so successful in preventing the hospitalization of the more severe mental disorders. Indeed, admission rates for psychoses in the U. S. Army have been relatively constant for over 40 years regardless of war or peace or other environmental variables. The decreased incidence of psychoses since 1955 as indicated in Chart 1 in actuality a gradual decline, is perhaps best explained by a reduction in the input of new military personnel: (See Table 1.) It is known that 65 to 75% of psychotic disorders in military personnel arise from men with less than two years of service.

A legitimate question may be raised con-

cerning subsequent effectiveness of those individuals who were maintained on a duty status. A partial answer to this question is given in Chart 2 which illustrates a gradual decrease of medical discharges for psychiatric illness since World War II. Except for a temporary rise during one year of the Korean War (1951) medical separations for psychiatric reasons continued to decline even during the wartime period and thereafter. These data indicate that the prevention of hospitalization did not produce mental disease so severe or chronic as to require medical separation. From other statistical data not shown here it can be categorically stated that there has been no compensatory increase of medical separations for illness or injury which could account for the discharge of psychiatric disorders concealed as organic or "psychosomatic" disease.

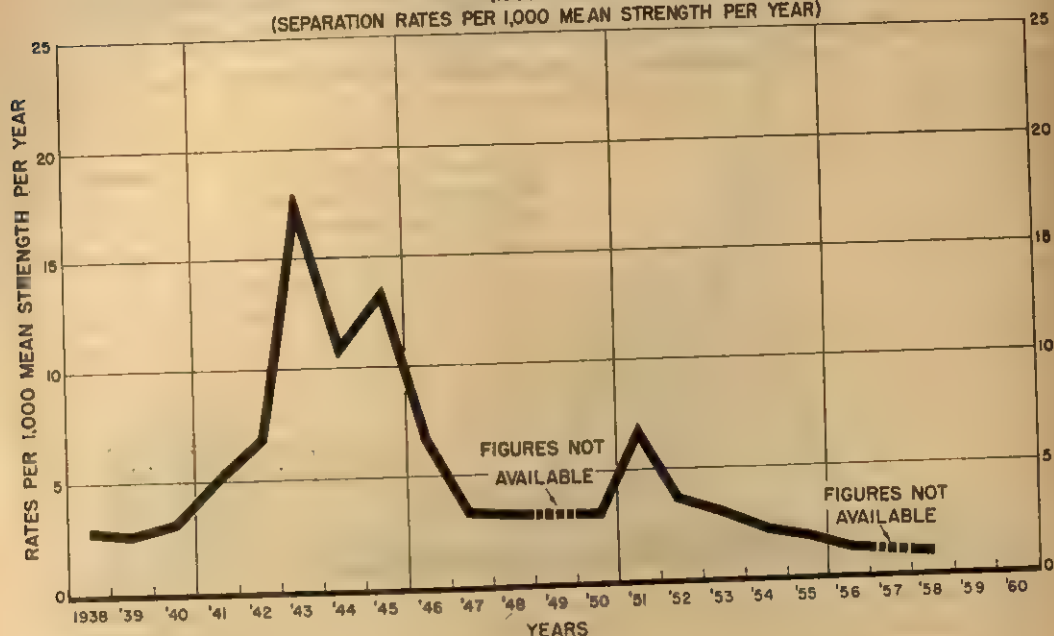
Any evaluation of a program aimed at the reduction of non-effective military performance must include its impact upon the incidence of behavioral abnormalities which

CHART 2

SEPARATIONS FOR DISABILITY DUE TO PSYCHIATRIC DISORDERS U.S. ARMY

(1938-1960)

(SEPARATION RATES PER 1,000 MEAN STRENGTH PER YEAR)

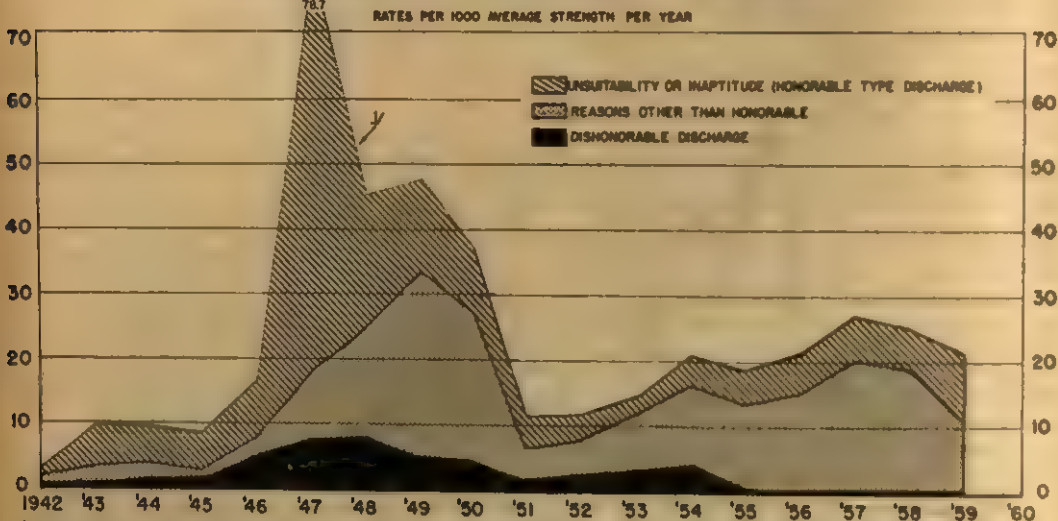


were sufficiently deviant as to cause removal from duty. It may be argued that decreased rates of hospitalization and medical discharge for psychiatric illness could be accounted for by an increase of administrative separations for unsuitability, unfitness, misconduct and the like. To shed light upon this question, Chart 3 gives rates of administrative separation for various causes from 1942 through 1959. It is apparent that elimination for behavioral reasons reached their lowest levels during the war years (1942-1945/1951-1953). This appears to be a regular recurring phenomenon which is believed due to more liberal policies of retention during wartime and a dilution effect from large inputs of inductees who generally require considerable time before their share of behavioral and disciplinary problems result in elimination procedures. In sharp contrast is the marked rise of administrative discharges in the postwar period. The smaller and cadre-type Army in peacetime has less opportunities for the utilization of marginal personnel particularly those who exhibit unsuitable or deviant be-

havior. There are also a number of behavioral and disciplinary problems from the previous wartime period which ultimately result in administrative and court-martial action in the postwar era. It should be noted that following the Korean War, rates of discharge for administrative and disciplinary reasons did not rise to nearly the high levels of the post-World War II period. It is herein contended that secondary prevention is at least in part responsible for this result. Mental Hygiene Consultation Services which were reestablished during the Korean War were continued and strengthened following the cessation of hostilities in contrast to their discontinuance with the rapid demobilization after World War II. Moreover, beginning in 1958, administrative discharges have begun to decline along with the decrease of psychiatric admissions and separations. Note also the recent trend for administrative separations to result in a higher proportion of discharges under honorable conditions. This indicates that behavioral problems are evaluated early in the course of their maladjustment

CHART 3

SEPARATION RATES, MALE ENLISTED ARMY PERSONNEL
FOR INAPTITUDE OR UNSUITABILITY, REASONS OTHER THAN HONORABLE
(INCLUDING UNFITNESS, MISCONDUCT, BAD CONDUCT, ETC.)
AND DISHONORABLE DISCHARGES. — 1942 - 1959

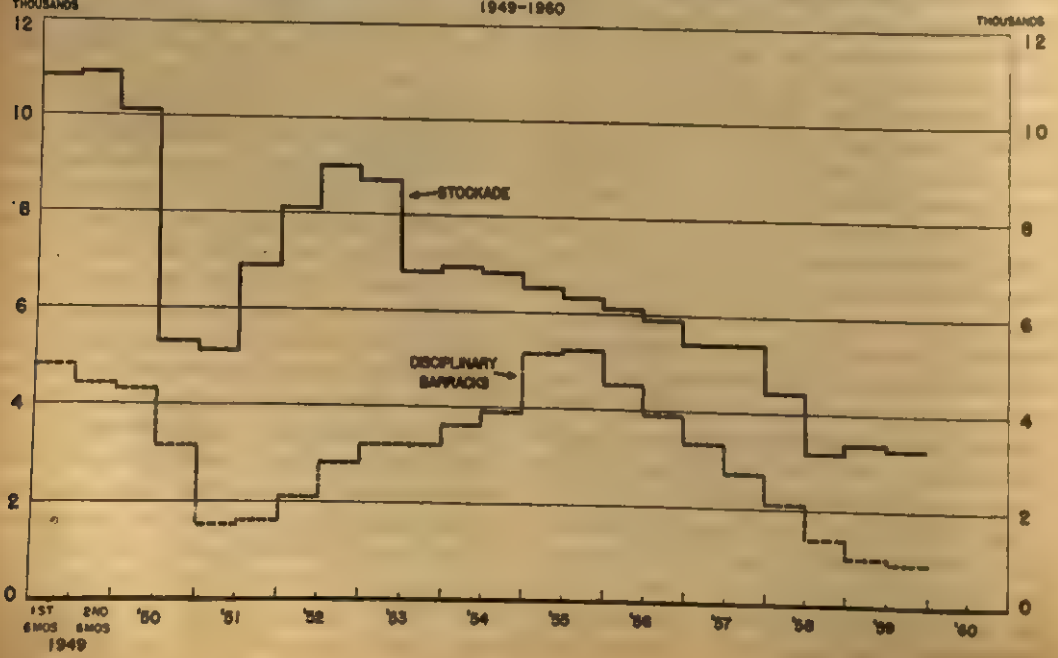


1/ INCLUDES UNKNOWN NUMBER OF INDIVIDUALS SEPARATED DURING THE PERIOD FROM AUGUST 1946 THROUGH MARCH 1950 BECAUSE OF LOW MENTAL SCORE (AGCT SCORE BELOW 70), IN ACCORDANCE WITH WD CIRCULAR 241 (DATED AUGUST, 1946), WD CIRCULAR 93 (DATED APRIL, 1947), AND DA CIRCULAR 299 (DATED SEPTEMBER, 1948), ENDING 28 MARCH 1950) WHICH PROVIDED FOR IMMEDIATE RELEASE OF SUCH INDIVIDUALS UNDER AR 815-300.

SOURCE: DEPARTMENT OF THE ARMY - DTSG - STATISTICAL DIVISION.

CHART 4

STOCKADE AND ARMY DISCIPLINARY BARRACKS
PRISONER CONFINEMENT RATE PER 1,000 ARMY STRENGTH



before accumulating an impressive record of antisocial behavior or disciplinary offenses.

Chart 4 shows a marked drop in the number of disciplinary barracks prisoners from 1956 through 1959. This decrease has permitted the closure of 4 of the 5 Army disciplinary barracks. The decline in stockade inmates, while substantial, is not as large as the reduction of disciplinary barracks prisoners. This disparity can be accounted for by the fact that major emphasis in the preventive psychiatry effort has been made at the stockade level which involved prisoners confined for relatively less serious offenses. Prevention of recidivism at this point has its greatest impact in diminishing the potential number of persons who may commit repeated or more serious offenses and become disciplinary barracks prisoners.

Chart 5 demonstrates that the decrease of the prisoner population is due to a diminished number of offenders rather than a rapid movement of prisoners through confinement. Note the marked drop in general courts-martial since 1956 from which disciplinary barracks prisoners originate. In con-

trast there is only a modest decrease of summary courts-martial which infrequently result in confinement and of special courts-martial which produce the majority of stockade prisoners.

It is recognized that rates of mental disorders, behavioral deviants and disciplinary offenders which are included in the statistical data that have been presented are influenced by many factors other than the efforts of psychiatric personnel. Of particular relevance in this respect are changes in policies and regulations which affect the selection, utilization, retention and discharge of military manpower and thus the composition of the Army. Two important alterations in recent years are pertinent since on an empirical basis both of these changes favored the induction and retention of personnel less susceptible to psychiatric disorders and behavioral difficulties. These changes are :

1. Recent increases in pay and other career incentives which, together with a decrease in the size of the Army since the Korean War, has resulted in an increased proportion of soldiers with several years of service over that of men with less than two

CHART 5

COURT MARTIAL RATES, BY FISCAL YEAR, 1946-1960
ARMY ACTIVE DUTY PERSONNEL, WORLDWIDE
 RATES PER 1,000 ARMY STRENGTH

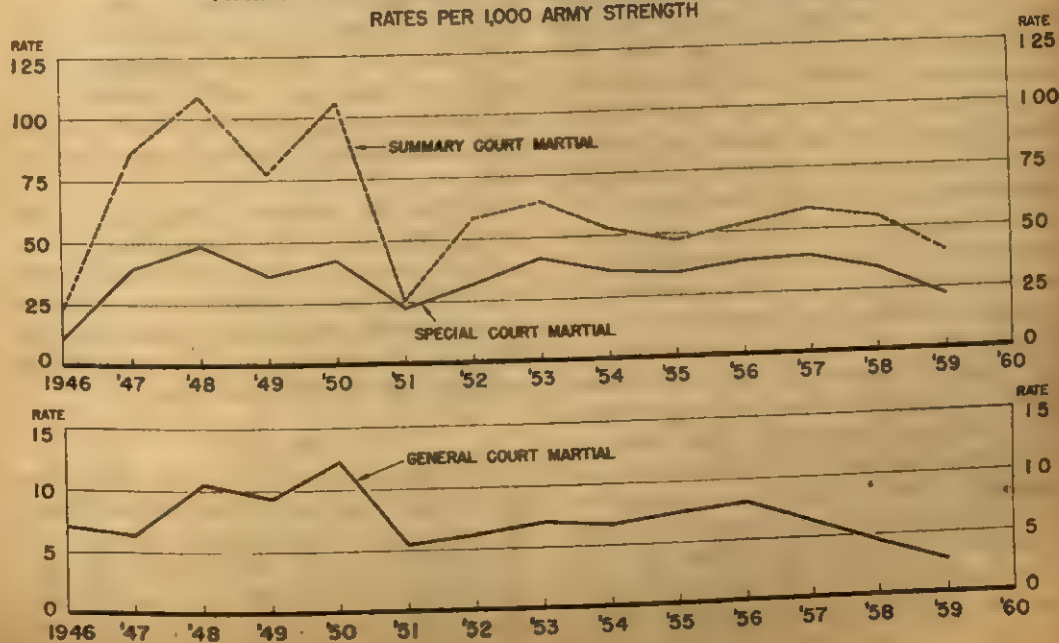


TABLE 1
YEARS OF SERVICE OF ENLISTED MEN IN THE U. S. ARMY*

Date	Total Enl. Strength	Years of Service		
		Under 2	2 to 6	Over 6
	%			
30 June 54	100.0	72.2	11.5	16.3
31 May 55	100.0	64.6	15.5	19.9
31 May 56	100.0	55.7	20.5	23.8
31 May 57	100.0	52.1	21.6	26.3
31 May 58	100.0	50.6	17.7	31.7
30 June 59	100.0	49.0	17.0	34.0

*Sample survey of Military Personnel (RCS AG-366)

TABLE 2
PERCENTAGE DISTRIBUTION OF HIGHEST EDUCATIONAL LEVEL OBTAINED
TOTAL ENLISTED MALE MILITARY PERSONNEL—U. S. ARMY*

Completed Years of Education	30 June 1953	30 June 1954	30 June 1959
13-16+	13.9	15.0	17.4
12	35.3	35.9	53.0
9-11	27.2	26.1	18.8
5-8	23.6	23.0	10.8

*Sample survey of military personnel (RCS AG-366)

years of service. It is well known that maladjustment problems are more prevalent among new arrivals to the Army as compared with individuals in their second and third enlistment. Table 1 shows the decrease in turnover of enlisted personnel in the post-Korean War period. Since 1957 the proportion of personnel with less than two years of service has decreased only slightly which is insufficient to account for the substantial decrease of prisoners and psychiatric admissions in the past three years.

2. Upgrading of intelligence criteria for retention and induction which was initiated in late 1957 and early 1958, respectively.

Table 2 indicates that these changes have considerably reduced the proportion of male enlisted personnel with educational levels of 8 grades or less in favor of men who completed high school. This raising of intellectual standards can be regarded as an important factor in decreasing non-effectiveness since in the past the prisoner group contained 3 times the proportion of individuals with eighth grade or less education than the general troop population. Also it

is a reasonable assumption that individuals with lower intellectual capability have greater difficulty in adjustment than persons of average intelligence and thus more frequently become psychiatric problems or disciplinary offenders. However, it should be noted that before the upgrading of intelligence standards in 1958, a marked drop in prisoner strength had occurred. In fact, 2 of 5 disciplinary barracks were closed in 1957.

Despite the undeniable influence of the recent changes in the composition of the enlisted strength of the Army and other possible influential factors, it is believed that the Army psychiatric program has significantly contributed to a consistent decrease in non-effective personnel.

SUMMARY

The primary objective of the Army psychiatric program is the reduction of non-effective military performance due to psychological causes. In recent years this program has been expanded to include disciplinary offenders as well as the usual psy-

chiatric disease categories. To implement this program, psychiatric personnel have been displaced from the hospital or clinic setting to the military community. This field approach has made possible the utilization of milieu as a major instrument in the development of primary, secondary, and tertiary techniques of preventive psychiatry. Statistical data are submitted which indicate that the Army psychiatric program has made significant contributions towards achieving the lowest recorded psychiatric hospitalization and medical discharge rates, and a marked reduction of the Army prisoner population.

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CURRENT TRENDS IN REGARD TO CRIMINAL RESPONSIBILITY¹

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It is not fantastic to suggest that we are on the threshold of a socio-psychiatric development that may prove to be as profound in its effects as when Philippe Pinel took the chains off the patients in the *Bicêtre*. To what extent Pinel, Tuke, and Chiarugi were personally responsible in creating, in their respective countries, the drastic changes which took place in the treatment of the insane, and to what extent they were merely the apostles of the social revolutions which marked the close of the 18th century, is a complex question. In the course of history there have been few individuals and few social changes that were not the product of their age.

In discussing current trends in regard to criminal responsibility, I shall first center my attention on the epochal achievements of the Court of Appeals of the District of Columbia that has, under the leadership of Judge David Bazelon, embarked on a pioneering effort to deal realistically and radically with the relationship of mental disorder to criminal behavior. Many legal leaders have branded the Durham decision as revolutionary. The intensity of this reaction could not have resulted from the rule alone, for that had been in force in New Hampshire since 1870, but rather, from the broad implications contained in the Durham opinion, viewed as ominous portents of the future.

The Durham decision was, in truth, a product of the times in which we are living. Only the year before the decision, a Commission of the British Parliament, headed by Sir Ernest Gowers had reported,

a preferable amendment of the law would be to abrogate the (M'Naghten) Rules and to leave the jury to determine whether at the time of the act the accused was suffering from a disease of the mind (or mental deficiency) to such a degree that he ought not be held responsible.

Law is a ponderous organism. For more than a century voices of protest had been continually raised from many quarters against the old rules of criminal responsibility, beginning with Dr. John Haslam, Dr. Isaac Ray, Dr. Henry Maudsley, and Sir James Fitzjames Stephens. Then there were the legal opinions of Judges Lemuel Shaw of Massachusetts, Somerville of Alabama, and of that remarkable triumvirate of New Hampshire jurists, Doe, Perley, and Ladd.

At the beginning of this century a dramatic and profound impetus to the understanding of human behavior came through the genius of Freud. His investigations, and those of his followers, showed that even the behavior of apparently healthy minded men is infrequently under full conscious control of the intelligence and that the actions of those who are less healthy are only to a very limited degree the product of deliberate planning and conscious control. Psychiatric contemporaries like Zilboorg, Alexander, and Karl Menninger have been creating a new understanding of anti-social behavior. The very foundations of the hegemony of the freedom of the will have been shaken. Legal leaders like Mr. Justice Frankfurter and Judge John Biggs and professors Sheldon Glueck, Dession, and Weihofen have shown an acute perception of the newer psychology and its, as yet largely unfulfilled, influence on criminal law.

During a short period of less than 20 years before the hearings in the case of Monte Durham, almost half of the states had passed sexual psychopath laws. The philosophical rationale of such legislation is recognition of the fact that many offenders cannot be properly segregated into two discrete groups, the insane and the sane, that there are individuals who have characteristics of both groups and should be dealt with accordingly.

I do not wish to detract from the importance of the Durham decision, nor from the unique brilliance of the opinion itself, which Mr. Justice Douglas characterized as "imaginative." Nor do I wish to minimize

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the moral courage of the jurists who framed it, even though the stage was in a measure already set for them. The granting of the Isaac Ray Award to Judge David Bazelon by our Association, is eloquent testimony of the attitude of American psychiatry.

One must surely admit that the Durham decision has had a profound and immediate effect. The fact that at least 6 state legislatures, those of New York, Massachusetts, Maryland, Pennsylvania, California, and Vermont have recently had bills introduced to redefine legal insanity shows the ferment that has been produced. Even though these bills failed passage in all but Vermont their introduction gives evidence of a nucleus of liberal dissenting opinion in each of these states.

The Durham Rule has been considered and rejected by 3 different Federal Courts of Appeal, by 3 Federal District Courts, the courts of 14 states and the Military Court of Appeals. This does not mean that each of these courts has considered the rule on its merits. In most instances it was rejected largely on technical grounds. The other Federal Courts, lacking the autonomy of the District of Columbia Court, felt they had to follow the M'Naghten Rules because of the Supreme Court decision of 1893. Most of the appellate state courts have held that changes in the rules of responsibility, because of their fundamental importance and the length of time that they have existed in their present form, should properly be the subject of legislation rather than of judicial decision.

It is the view of Judge Bazelon that the Durham Rule itself is of less importance than the more than 50 subsequent decisions, handed down by the Court of Appeals of the District of Columbia, to implement it properly. Any psychiatrist who has reviewed these opinions must be struck by their practical wisdom and by the breadth of psychiatric understanding that is inherent in them.

I have had the good fortune of reading in manuscript an unpublished paper on the Durham Rule and the decisions which followed it, by Mr. Abe Krash, a prominent member of the District of Columbia Bar. I have taken the liberty of using some of this material. Mr. Krash asserts that there

are 3 fundamental principles implicit in the Durham decision :

1. That mental disorder may play a significant part in a substantial number of criminal cases.

2. That hospitalization with treatment may in a number of instances prove to be of greater benefit to society than imprisonment of the defendant.

3. That existing rules and procedures are obsolete and inadequate for segregating mentally disordered defendants and for dealing with the manifold problems that arise with the insanity plea.

Let us now examine some of the more important decisions that have emanated from this court in the past 5 years, as an outgrowth of the Durham decision.

The defendant's ability to stand trial was considered in the Lyles case. The Court states that,

A paranoiac or a pyromaniac may well understand the charges against him and be able to assist in his defense. "To assist in his defense," of course does not refer to legal questions involved but to such phases of a defense as a defendant usually assists in, such as accounts of facts, names of witnesses, etc.

In *Gunther v. U. S.*, the Court held that fitness to stand trial was not purely a medical decision and that a court was required to make its own findings, since this issue involves "a judgment based upon a knowledge of criminal trial proceedings." These are important declarations, which deal with a problem of growing importance. It is my impression that courts and prosecutors have tended more and more to rely on unfitness for trial as a device by which mentally diseased defendants can be dealt with humanely through hospitalization, without exposing them to the vagaries of jury decisions, under current court procedures and the prevailing rules of responsibility. Defendants are committed to a hospital until such time that they are sufficiently recovered to be tried. Frequently the case is statted after a considerable period of time and the patient is released on recovery without trial. This legal circumvention is, I believe, one instance of what Mr. Justice Frankfurter meant when, in speaking of the M'Naghten Rules he said, "they are discredited by those

who have to administer them . . . they are honoured in the breach not in the observance."

In the Wear case the Court held that a request to have a defendant examined psychiatrically must be granted unless the motion were made in bad faith and the supporting grounds were frivolous. The examining psychiatrists are authorized to make whatever tests are necessary, even to hospitalizing the patient. In the Winn case the Court decided that such an examination should not be confined narrowly to fitness to stand trial but should be complete where it appeared that insanity might be made an issue.

In keeping with the opinion of the Supreme Court in *Davis v. U. S.* in 1895, the District of Columbia Court of Appeals has emphasized the heavy burden of the prosecution to prove sanity once it has become an issue through the introduction of data indicating mental abnormality. But, the Court stated that some evidence of insanity is needed, mere claim of loss of memory of the crime is not enough; however, it admitted that "some evidence" cannot be definitely defined.

In both the Stewart and the Wright cases, the Court stated that a psychiatrist is not forbidden from testifying as to the existence of an irresistible impulse or the capacity to distinguish between right and wrong, but that where such testimony exists the jury should be instructed that it is only relevant in determining whether the unlawful act was a product of mental disease or defect and is not controlling as to responsibility.

The Court has held that whether a sociopath is mentally diseased is a question of fact to be decided by the jury and that instructing a jury that a psychopath is not insane within the meaning of the law is a reversible error. I am informed that in practice most psychopaths are held to be responsible by District of Columbia juries, despite the fact that the staff policy of St. Elizabeths Hospital was altered in 1957 to include psychopathy among the mental diseases.

As a result of a 3-year study of the English laws governing insanity by a Royal Commission, a new set of acts has recently been passed by Parliament. Due, in no small

part, to the urgent advocacy by this year's Isaac Ray award winner, Dr. Maxwell Jones, who directed for more than a decade the Belmont Hospital, an institution primarily for character disorders, psychopathy is considered a certifiable mental disease under the new Act. This is decried by the more conservative leaders in psychiatry as well as in law.

The social malignancy of his behavior, his disruptive influence in the hospital, and the difficulty that he presents in treatment, makes the psychopath generally a most unwelcome patient. Many psychiatrists feel that the already overburdened therapists should not have to take time away from more promising treatment prospects. In response to a recent paper, in which I welcomed the admission of cases of this type to intensive study and treatment units, one of this country's leading jurists wrote me that he considered it doubtful wisdom to expend large sums of public money on these individuals, when there were thousands of promising youths who could not go to college due to a lack of funds. As important as is the education of our youth, it seems to me that there could be no greater boon for the future of our society than a real break through in the treatment of psychopathy. The belief that the psychopath is evil and therefore is not deserving of our best treatment efforts is prevalent among us. This is reminiscent of the attitude that at one time was reputed to the gynecologist, Dr. Howard Kelly, one of the founders of the Johns Hopkins Medical School and a deeply religious man. He is said to have believed that those who acquired venereal disease illicitly did not deserve the same consideration in their treatment as those who had acquired the infection innocently.

The dire predictions by many Durham critics that the decision would turn our mental hospitals into prisons because of the overwhelming number of defendants who would be found to be insane under it, have not eventuated. Of the 10,000 defendants charged in the District of Columbia Criminal Courts since 1954, 90 have been found not guilty because of insanity. Of these, 26 have been conditionally released and 4 unconditionally. Of this number only 3 have been involved in serious anti-social offenses,

probably a much better showing than would be found in a similar number released from the penitentiary after the completion of their sentences. According to the *Washington Post-Times Herald* that collected these data, the term of hospital confinement was not substantially different from their probable period of imprisonment, had they not been found insane. The experimental study of juries by the University of Chicago indicates that cases presented to juries with judicial instructions according to Durham do not result in an increased number of insanity verdicts.

One of the chief targets for criticism of the Durham Rule is the inclusion of the product element. It is largely on this basis that Professor Wechsler, the very astute Recorder of the American Law Institute's Model Penal Code, has opposed the Durham formulation. The District of Columbia Court of Appeals has spelled out its own definition of "product."

... we mean that the facts on the record are such that the trier of the facts is enabled to draw a reasonable inference that the accused would not have committed the act he did commit if he had not been diseased as he was. There must be a relationship between the disease and the act, and that relationship, whatever it may be in degree, must be, as we have already said, critical in its effect in respect to the act. By "critical" we mean decisive, determinative, causal; we mean to convey the idea inherent in the phrases, "but for," "effect of," "result of," "causative factor."

The relationships "are not intended to be precise as though they were in a chemical formula."

The Court has made some prudent observations in regard to psychiatric testimony. In *Carter v. U. S.* it declared,

Unexplained medical labels—schizophrenia, paranoia, psychosis, neurosis, psychopathy—are not enough. Description and explanation of the origin, development, and manifestations of the alleged disease are the chief functions of the expert witness. The chief value of an expert's testimony in this field, as in all other fields, rests upon the material from which his opinion is fashioned and the reasoning by which he progresses from his material to his conclusion; in the explanation of the disease and its dy-

namics, that is how it occurred, developed, and affected the mental and emotional processes of the defendant; it does not lie in his mere expression of conclusion. The ultimate inferences *vel non* of relationship, of cause and effect, are for triers of the facts.

This formulation of psychiatry's contribution to a criminal trial presents a challenge which, I fear, few psychiatrists are equipped to meet. Dr. Andrew Watson, in his excellent paper read at the 1959 meeting of the APA, concluded that this ideal was not then being attained by the psychiatric experts in their testimony in the District of Columbia cases. This directive by the Court, creates the forensic climate for which we have been clamoring. We must school ourselves to perform adequately in it.

It has long been my contention that the written case reports sent to the Court by our clinic in Baltimore should contain the full body of data available—definitive opinion and conclusions with excerpts are not enough. The court is, I believe, entitled to have the opportunity of appraising the thoroughness of our study and the reasonableness of its conclusions from the data which we had available to us.

In a very recent case, *Hopkins v. U. S.*, the Court reasserts that

while a lay witness's observations of abnormal acts by an accused may be of great value as evidence, a statement that the witness never observed an abnormal act is of value if, but only if, the witness had prolonged and intimate contact with the accused.

Those of us who are engaged in clinical psychiatry can readily attest to the wisdom of this dictum. The observational powers of most individuals are amazingly inadequate. How often we are told by the co-workers and companions of out and out psychotics, "he always seemed perfectly normal to me."

It has been held in the *Lyles* case that the written diagnosis of a psychiatric disorder is inadequate in the absence of the physician who made it. The psychiatric diagnosis is considered to be an opinion and not a record of "an act, transaction, occurrence or event." The Court has, I believe, wisely held in this opinion that psychiatric diagnoses are less certain and reliable at

present than are autopsy, toxicological, and many medical diagnoses.

In *Taylor v. U. S.*, the Court held that it was a reversible error if the instructions to the jury in the District of Columbia failed to inform them of the requirement of an indefinite period of psychiatric hospitalization on the finding of a verdict of not guilty because of insanity. Jurors should not be left with the misapprehension that the defendant will probably be institutionalized for only a short period and then released. This seems to me to be very important. One of the chief characteristics of a jury, and indeed one of its chief assets, is its practical nature and although the disposition of the offender is not supposed to be involved in the determination of its verdict, it has great influence unconsciously, if not consciously, in the type of verdict that is reached.

Mandatory commitment of defendants found not guilty because of insanity is the rule in only 9 states. In 12 states the court is empowered to commit the defendant if he is deemed dangerous to public peace and safety. In 8 states the court is given discretionary power to commit if the need exists, with no criteria nor means for establishing this need. A similar number of states provide that commitment to a hospital shall be made if the insanity is believed to persist at the time of trial. In 7 states present insanity becomes a separate jury issue to be resolved at the time of trial. In these states, if the defendant is found to have recovered by the time of trial, he is immediately and unconditionally released. This last plan seems to me especially unsound and tends to bring legal psychiatry into disrepute. One of the chief functions of the criminal law is to bring peace of mind to the citizenry. This necessitates further hospitalization and observation after an insanity verdict.

Stringent requirements for release from the psychiatric hospital, in cases in which there had been a "not guilty because of insanity" verdict, were spelled out in the *Leach* case. Improvement or remission of illness was not enough, there must be "freedom" from such abnormal mental condition as would make the individual dangerous to himself or the community in the reasonably foreseeable future." This decision in itself

did much to reduce the number of insanity pleas by sociopaths.

The Court has ruled in *Starr v. U. S.* that a patient cannot continue to be held merely because of a felonious character: his dangerousness must come from mental disease or defect.

This year the Court forthrightly set aside the judgment of guilty in the case of *Isaac v. U. S.* and directed that he be found not guilty because of insanity. Judge Prettyman, in the opinion in the *Isaac* case, outlines the procedural steps for the release of insane defendants: "First, the superintendent of the hospital certifies to 3 conclusions based upon his expert professional opinion; (a) *Isaac* is not suffering from a mental condition which (b) renders him dangerous to himself or to others in the reasonable future, and (c) he is entitled to an unconditional release; or the superintendent certifies that . . . he is entitled to be conditionally released under supervision." The court in which the person was tried, "in the exercise of a judicial judgment and in the absence of objections" of the prosecuting authority, "may accept the certificate of the superintendent and order the release of the person." But, the court may hold a hearing on its own initiative. If the prosecuting authority objects to the authority of the superintendent's certificate, a court hearing is mandatory. This opinion concludes with the statement, "The part of the court in the release procedure is not *pro forma* or merely technical; it is the performance of judicial acts, dependent solely upon the evidence and the judicial judgment of the court," of course, giving due weight to the opinion of the hospital superintendent.

To some it may seem paradoxical that this psychiatrically enlightened court has persistently refused to adopt the concept of partial responsibility. In 1946, a vigorous dissent was made by 3 justices of the Supreme Court in the *Fisher* case, in which they favored the concept of diminished responsibility. The Homicide Act, passed by Parliament in 1957, establishes the concept of diminished responsibility in England, patterning it after the Scottish doctrine, which has been in force for nearly a century.

There are, of course, no such entities as

sanity and insanity. The gradations from mental health to mental disease form a continuum. It is difficult enough to establish the point at which significant disease may be said to exist. When the task is further complicated by seeking to establish the limit at which a sufficient degree of abnormality develops to impair responsibility but insufficient to negate it, one has indeed a knotty problem and one that can only result in the fine spun reasoning that has marked expertising under M'Naghten. Doubtless, the desire to escape this morass has been in part responsible for the disinclination of the District of Columbia Court to recognize partial responsibility. Moreover, the finding of a mitigating but nonexculpatory degree of mental abnormality would not provide the defendant the opportunity of psychiatric hospital treatment, so that little good would be accomplished by it.

If a recent trend in Maryland can be considered typical, and I believe that it may be, there is an increasing tendency to temper M'Naghten justice in homicide cases by arriving at a reduced grade of responsibility through a finding that the accused, because of mental disorder, lacked the elements necessary to establish first degree murder.

The controlling case in Maryland is that of *Faulcon v. State*, heard in 1956. The opinion of the Court of Appeals stated :

1. The essential difference between murder and manslaughter, therefore, is the presence, or absence, of malice. In the absence of justification, excuse, or some circumstance of mitigation, malice may be inferred. . . . 2. To justify a conviction of murder in the first degree, the jury, or the court sitting without a jury, must find the actual intent, the fully formed purpose to kill, with enough time for deliberation and premeditation to convince that the purpose is not the immediate offspring of rashness and impetuous temper, and that the mind has become fully conscious of its own design. For a homicide to be "wilful," there must be a specific purpose and design to kill ; "deliberate," a full and conscious knowledge of the purpose to kill ; and "premeditated," the design to kill must have preceded the killing by an appreciable length of time, i.e., time enough to deliberate. Deliberation and premeditation need not have been conceived or have existed for any particular length of time before the killing.

That this is a good law, I have no doubt. But that the psychiatric expert has any special skills by which to determine with accuracy these important elements : malice, wilfulness, deliberation and premeditation, I have very grave doubt. To be sure, the average juror lacks this discernment also. Legally these are questions of fact and since the law requires that they be answered, the jury must do the best that it can with them, but I believe that they should not be asked of the psychiatric expert. All that should be required of him is to describe in detail the mental condition of the defendant at the time of his examination and, as far as he is able, what he can infer was his psychiatric condition at the time of the crime. To have the expert answer inquiries about malice, wilfulness, deliberation, premeditation, etc., is seriously misleading, because the jury will naturally conclude that he has some very special competence in this area and will be unduly guided by his answers.

It is much like the questions in regard to knowledge of right and wrong and the nature and quality of the act, asked under M'Naghten. It seems to me that the claim that under *Durham* the psychiatrist takes command of the trial is entirely untrue. He is testifying as to facts in which he has special competence. He is in a position to state whether his conclusions as to the psychiatric condition of the accused at the time of the offense are essentially an hypothesis, an opinion or a conviction, so that even his degree of certainty can be evaluated. The jury can also appraise his thoroughness and his competence. Under the old rules of responsibility and the old procedural methods of presenting testimony, with the "all or none" type of answer which is commonly given in response to categorical inquiries about fictional psychological entities, which the law has created, and with which the expert has little familiarity and no special competence, there is given to the expert's pronouncements a specious air of wisdom and certainty which is misleading and elevates the psychiatric expert to a commanding status in the eyes of the juror that is not deserved.

I have always been a proponent of the use of court appointed neutral experts in trials. I have maintained that although our

adversary method of trial may be a desirable means for presenting ordinary factual data, it is not the optimum method for presenting opinion evidence on scientific subjects. But perhaps, until we follow the course set by the District of Columbia Court and change the focus and the range of testimony generally required of the psychiatric expert, the conventional adversary method should be retained, so that the opinions of one set of experts can be used to nullify the opinions of those of the opposing set, leaving the jury free to exercise its independent common sense.

The test of responsibility proposed by the American Law Institute in its Model Penal Code has gained acceptance in many legal quarters. It reads :

1. A person is not responsible for criminal conduct if at the time of such conduct as a result of mental disease or defect he lacks substantial capacity either to appreciate the criminality of his conduct or to conform his conduct to the requirements of law. 2. The terms "mental disease or defect" do not include an abnormality manifested only by repeated criminal or otherwise anti-social conduct.

This test, in slightly amended form, has become the law of Vermont. It has received, or is receiving, serious consideration by legislative committees in California, New York, Illinois, Wisconsin, and Maryland. In the 85th Congress a bill was introduced to make it the law of the District of Columbia.

The 3 psychiatrists who are members of the Advisory Committee to the drafters of the American Law Institute's Model Penal Code have vigorously protested against this definition. Even though they see it as an improvement over M'Naghten, in that it is not framed in the old familiar but vague ethical terms of M'Naghten and it avoids its rigidity and gives recognition to that vital aspect of behavior, the capacity to control conduct, they do not find it acceptable.

In a recent protest, Drs. Lawrence Freedman, Overholser, and I stated that we believed that no formula for determining criminal irresponsibility by reason of mental disorder can be acceptable which demands a degree of precision of definition which exceeds present knowledge and a fragmentation of human function which denies its es-

sential unity. "In our opinions the definition's concept of 'capacity to control' suffers from 2 deficiencies : it attempts to compartmentalize human functions out of the context of the functioning human organism and it makes a technical demand on the psychiatrist which he cannot fulfill." We further objected "to the attempted definition of sociopathic or psychopathic personality and the legal elimination of a psychiatric diagnostic condition when it is 'manifested only by repeated criminal conduct or otherwise anti-social conduct,' " which according to the commentary in the draft of the Penal Code was the purpose of the second part of its definition. We failed to see "how the law can determine that a compulsive repetition of a form of behavior is non-pathological." We expressed great doubt as to the wisdom and necessity of attempting to legislate on matters of psychiatric terminology and concept.

In this protest to the Advisory Committee, its psychiatric members stated that they favored the Durham formulations since it permitted all of the relevant psychiatric data to be introduced and to be integrated by juries in their decisions as to fact. We admitted that the concept of "mental disease" would change with advancing research and knowledge, but we believed that the Durham Rule would permit psychiatrists to testify in the light of the then current knowledge. It was our contention that the word "product" offered no insurmountable barriers to logic, to science, nor to common sense.

Perhaps no one has given more prudent advice in regard to adjusting to the changes in the attitude of law toward mental disorder than the great Oxford legal scholar, Sir Paul Vinogradoff, when he wrote nearly a half century ago :

... It is immensely important that popular notion should be brought up to a level with broad results of scientific study. By imperceptible degrees scientific discoveries are making their way into popular consciousness, and it is the duty of those who are in closer touch with progressive thought—lawyers as well as scientists—to promote by all available means the spread of knowledge on these subjects.

People are often shy of approaching the psychological study of legal phenomena, especially

of crime, because they are afraid of undermining the practical premises of social security by investigating closely the psychological motives of criminals. This apprehension seems based on a pure misunderstanding: the principle of social self-preservation requires adaptation to altered scientific views rather than adherence to antiquated theories and the grappling of juries in every single case with the perplexing problem of responsibility.

If we look with complete candor into the future we must agree with what Lady Barbara Wootton, one of England's leading social scientists, said in a recent British Broadcast entitled, "Neither Child nor Lunatic." The socio-psychiatric evolution, or revolution if you will, through which we are living, points in the direction which she has indicated. Her broadcast concluded with these words:

Personally, I do not see how this state of affairs can continue indefinitely. Nor, indeed, do I see any reason why it should. The only solution, as I see it, is to give up trying to draw the line between the responsible and the irresponsible, and to recognize that once we have departed from the comparative security of the

M'Naghten formula there is no logical resting place short of abandoning the questions of responsibility altogether. In fact, that is just what has already happened under the Mental Health Act. In the case of the psychopath, the question whether he can, or cannot, help his outrageous behaviour is simply not asked: the only issue is his need for, or probable response, to treatment. So perhaps in the end we shall come to that in the courts also. In that case everything except treatment—guilt, responsibility, and all the rest of it—would become irrelevant. At least such a system would be both humane and effective, which is more than can be said for what we have now.

Perhaps this sounds like the millennium. But people had such dreams, long before psychiatry, as such, came into being. It was Epictetus, the Stoic, who said during the 1st century, that the wise man should regard even the greatest criminal as one who was unfortunate and confused and should not be angered with him.

To be sure, this ideal is still a long way off, and doubtless it is better so, until the behavioral scientists learn a great deal more about effectively treating and preventing crime.

COOPERATION FOR RESEARCH IN PSYCHIATRY AND LAW¹

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The study of the selection and training of physicians has made rapid strides forward in recent years. The psychiatric profession in all its branches is a beneficiary of this redoubling of concern for the recruitment and formation of the profession. It cannot be said that research upon the legal profession is as far advanced (1). We shall forego the temptation to deal in detail with the sophistication of the lawyer in psychiatric conceptions and methods, and of the psychiatrist in legal concepts and techniques (2). Perhaps it is enough to reiterate the importance of the problems involved, and to select for emphasis 4 topics of high importance for the future of creative working relations between psychiatrists and lawyers. We focus upon 1. The problems of communication, 2. Of professional values, 3. Of the subjective stresses of collaboration, and 4. Of competency on the part of collaborators.

PROBLEMS OF COMMUNICATION

Not enough attention has been given to the study of one of the principal tools at the command of both professions, namely, language. More investigation is needed to bring out the subtle influence of categories upon perceptions of relevance. Modern instruments of communication (and information) research are available to cast into high relief the categories and problem solving processes appropriate to legislator, advocate, judge and jury; and the categories and problem solving processes appropriate

to the psychiatric physician. The community's official decision makers are authorized to decide in the name of the body politic what preferred forms of human relationships are to be protected by his decisions. This is the basic job of the decision makers who formulate constitutional charters which provide the framework of goal and method within which legislators, executives, administrators, and judges work. The language of the legal formula refers to the institutional arrangements that are to be protected by authority; in a word, to the public order (3). The decision makers are authorized to use the terms and prescriptions of the legal formula, as embellished by proper authorities, to guide their problem solving activities when confronted by a broad problem of legislation or a question involving the fate of one accused person.

The physician is not able to make his best contribution if he is bound by this language. The Durham decision in the District of Columbia has been a landmark in clarifying this point; and in making it evident that the appropriate language of the physician is that of his own profession, plus illuminating synonyms in ordinary speech. Communications are most usefully studied in situations in which we can identify who with what intentions and capabilities is saying what in what channel to which audience with what effects. It is entirely feasible to observe and record the professional situations in which lawyers and psychiatrists operate, and to bring out significant likenesses and differences. For instance, the psychiatrist interviews, among others, patients, relatives of patients, physicians and other staff members. The lawyer also interviews, among others, clients, opposing and cooperating counsel, and witnesses. The psychiatrist testifies as an expert in the decision-making processes of the community. The lawyer's advocacy role in official proceedings is to examine witnesses and argue the claims of the parties whom he represents. These reminders are sufficient to suggest that much can be done in providing a common body of objective material about

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language-in-action; and to suggest the possibility of principles of effective communication (4, 5).

PROBLEMS OF PROFESSIONAL VALUES

It is apparent that professional education does not now clarify the professional standards of lawyers and psychiatrists where their activities overlap. For instance, privilege and confidentiality of communications and records, as well as evaluation of capacity and competence to perform certain legal acts, involves the psychiatrists in making legally pertinent judgments. Experience shows that psychiatrists and jurists often misunderstand the basic assumptions of the other in protecting the rights of individuals and of groups. The psychiatrist thinks primarily in terms of his responsibility for the health of the patient, and interprets his license from the community as a recognition of his competence to defend the medical rights of a patient. The lawyer is accustomed to emphasize the fundamental importance of providing procedural safeguards by means of which all rights can be given effective protection by the community. Accustomed to view himself as the benign, therapeutic protector of his patient, the psychiatrist often cannot understand the lawyer's concern with the "rights" of the patient while under his care. The psychiatrist sees impartial, court-appointed testimony concerning mental states, commitment to mental hospitals and psychiatrically ill people, and medically determined dates of discharge as essential medical prerogatives for the optimal psychiatric welfare of emotionally disturbed persons whether or not they have violated legal codes. He finds it difficult to comprehend the lawyer's assumption that adversary experts, court procedures for admission to hospitals, and legally imposed limits for treatment within them constitute essential protection of the rights of the patient. This illustration serves to point up the necessity for clearer conceptualization by each of the professional "body-image" and social posture. It has become apparent that recruitment, self-selection and acceptance for training by the prospective professional schools may favor certain motivations and personality types within each profession. If we are to remove

these misunderstandings that so often arise, we need joint research teams to investigate specific cases and to subject them to mutual discussion and evaluation. A clear delineation of their respective roles, values and semantics is probably best carried out by disinterested social scientists with the active cooperation, as subjects, of adequate samplings of lawyers and psychiatrists representative of differing schools of thought, status level, backgrounds and age groups. In the course of these studies workable arrangements may be suggested and explored that provide guidance for the psychiatric hospital, the private physician and the public officials involved in typical dilemmas.

SUBJECTIVE PROBLEMS IN COLLABORATION

Perhaps equal in importance to the considerations we have just made are the personal motives and social qualities of the lawyers and psychiatrists who work together on research tasks. At present little attention is given these matters in the course of professional preparation. It may be diplomatic and strategic to deny the irrational strivings, the rivalries, anxieties and conflicts which inhere to a project bringing together men of varying professional backgrounds, and personal values and characteristics. But it is not realistic or constructive. While it would be sanguine to assume that the mere delineation of anticipated pitfalls at a personal level will eliminate them, certainly it is essential that they be delineated and anticipated if precious time, manpower, and financial support be not dissipated. Worse still, the original energy may be supplanted by frustration and disillusionment, not as a result of difficulties inherent in the social challenge, but as an artifact springing from the human dislocations within the collaborative team.

Professionally the lawyer and the psychiatrist have much in common as shared experience which could facilitate the preliminary stages of research collaboration. For example, both professions have perforce learned to conduct their observations on human behavior under conditions permitting maximum spontaneity of response of their subjects. Neither is hampered by the illusion that the laboratory is the only place to study the activities of man. Against

this is the much reiterated therapeutic ambition of the psychiatrist leading him to identify with his single patient as against the threatening and oppressive community, and the social concern of the lawyer, leading him to think in terms of the maximum good to the maximum numbers while trying to do least harm to its individual members.

Lawyers and psychiatrists belong to prestigious professions, which offer them successful, status-occupying positions in the community. This maximizes their tendency to maintain identity and minimizes the likelihood of their yielding autonomy and sovereignty. When the opportunities for "success" within one's own profession, using one's own language, sharing one's values with fellows are great, only a very particular subgroup selects itself out for collaborative enterprises with sceptical and "alien" brother disciplines. The ambivalences inherent in this situation are sharpened by the scepticism encountered by these interdisciplinary pioneers on both sides—members of their own professional group and members of the collaborating group.

PROBLEMS IN COMPETENCY

Intellectual preparation for collaborative work doubtless calls for realistic modesty about competence. It would be over-optimistic to assume that it is practicable to bring together an effective group, each member of which has sufficient information to encompass and incorporate even the basic principles of the collaborating disciplines. Another requirement for such a research team, therefore, is that the members

are capable and willing to devote the time and manifest the humility necessary to educate one another. As a corollary to this, the participants must be willing to eschew the defensive maneuver of claiming for themselves and their own disciplines "expertness" in all fields which fall within their professional prerogatives. For, even within any given discipline, it is unlikely that a single man encompasses the knowledge available to his entire specialty. For example, psychiatrists while medically and biologically trained, are hardly in a position to speak for medicine and biology except vis-à-vis their non-medical collaborators. Similarly, lawyers specializing in one or another subcategory of this massive field ought not to feel forced to pretend to a range of expertness beyond it.

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THE COMMUNICATION OF SUICIDAL INTENT PRIOR TO PSYCHIATRIC HOSPITALIZATION: A STUDY OF 87 PATIENTS^{1, 2}

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During the course of our studies of attempted and successful suicide, it became evident that persons who attempt or commit suicide frequently communicate their intentions prior to the act (1, 2). The present study was undertaken to assess the content, frequency, duration, repetitiveness, and relation to clinical diagnosis of suicidal communications in patients who were ill enough to be admitted to a psychiatric hospital, but who were selected without regard to suicidal communications or acts. This study was limited to *communications* (verbal or behavioral, for example, a suicidal attempt) concerning suicide rather than to thoughts about suicide, for two reasons: (a) It was believed that more reliable and valid information could be obtained about actual communications than about thoughts. (b) It was desirable to have the present data comparable to the data from a previous study of completed suicide. Information in the completed suicide study was available only from surviving informants, who could give evidence of communications of intent, but not of uncommunicated suicidal thoughts. In this paper we will report on the suicidal communications of patients at the time of admission to a psychiatric hospital.

METHOD OF STUDY

Selection of Patients.—The primary object was the selection of an unbiased sample of admissions to a psychiatric hospital, within the limits imposed by hospital admission policy. Renard Hospital, where this study was done, is the psychiatric hospital for

Barnes Hospital and Washington University School of Medicine and is designed for short-term psychiatric care, admitting chiefly private patients or paying staff care patients. The present group of 87 patients included 71 private and 16 staff care patients. The mean duration of hospitalization was 23 days.

Limitations of time and personnel made it impossible to include every patient admitted during the two months' study. The selection criteria were: every patient admitted between 8 a.m. and 5 p.m., Monday through Friday, was to be included if accompanied by an informant and if his admission did not occur while interviews with a preceding patient and his informant were in progress.

During the study, 242 patients were admitted; 155 were excluded (143 by our selection criteria and 12 unintentionally), leaving 87 patients studied (Table 1), or 88% of the 99 patients who fit the selection criteria.

A comparison of the hospital records of patients included with those of patients excluded inadvertently or because they did not meet the selection criteria showed that the two groups did not differ significantly with regard to proportion of the sexes, age, history of a previous suicide attempt, proportion who received EST during their hospitalization, duration of hospitalization, or discharge diagnoses (Table 2). The sample of 87 patients represents, therefore, a relatively unbiased selection of the total admissions to Renard Hospital.

Sources of Information.—There were 5 sources for each patient: (a) The admission history taken by the admitting resident, in the presence of the investigator. (b) An interview with the informant, almost always a relative, who accompanied the patient. (c) An interview and mental status examination of the patient. (d) A questionnaire to each patient's psychiatrist concerning suicidal communications, and inquiring whether concern about suicide was a rea-

¹ Read at the 116th annual meeting of the American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

² We wish to thank the entire attending staff of Renard Hospital without whose generous cooperation this study would not have been possible. We also wish to acknowledge our debt to Mrs. Anne Stacy for doing the statistical calculations.

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son for his admitting the patient.⁴ (e) A review of the hospital records after discharge.

⁴ The questionnaire included the following questions: (a) Had the patient communicated suicidal intentions to you? (b) Had the patient, to your knowledge, communicated suicidal intentions to anyone else? (c) Had the patient made a suicide attempt? (d) Was the possibility of suicide a major reason, a minor reason, or not a reason at all for your decision to admit the patient to the hospital?

A systematic interview with the informant, averaging over one hour, was done immediately upon admission of the patient, and preceded the interview with the patient. It covered identifying items; chief complaint; symptoms and natural history of the present illness; school, arrest, job and marital history; alcoholic and drug intake history; a history of personal life stresses; and inquiries as to whether the

TABLE 1
SELECTION OF PATIENTS

Total admissions		242
Patients excluded		155
By selection criteria		143
Admitted weekdays 5 p.m. to 8 a.m.	55	
Admitted weekends	46	
Patient unaccompanied	23	
Simultaneous admissions	19	
Unintentionally excluded		12
Investigator not notified	6	
Investigator unavailable	2	
Informant refused to wait	1	
Unknown	3	
Patients included		87

TABLE 2
REPRESENTATIVENESS OF THE PATIENTS STUDIED

	<i>Patients Studied N=87</i>	<i>Patients Not Studied * N=109</i>
Sex		
Men, %	34	38
Women, %	66	62
Age (Years)		
Mean \pm standard deviation	45 \pm 16	47 \pm 17
History of suicide attempt, %	11	10
Received electroshock therapy during hospitalization, %	39	41
Duration of hospitalization \pm standard deviation	23 \pm 19	28 \pm 30
Discharge diagnoses †, %		
Depressive reactions	51	46
Manic reactions	5	6
Schizophrenia	8	13
Neurotic reactions	5	6
Alcoholism	5	3
Acute and chronic brain syndromes	8	12
Miscellaneous other diagnoses	6	4
Multiple psychiatric diagnoses	7	6
Undiagnosed	6	4

* Includes 55 patients admitted on weekdays from 5 p.m. to 8 a.m., 23 unaccompanied patients, 19 simultaneous admissions, and the 12 patients unintentionally excluded, but does not include the 46 patients admitted on weekends. Since the 109 turned out to be so similar to the studied patients the addition of the inadvertently omitted 46 weekend admissions probably would not have changed the comparisons appreciably.

† These are diagnoses made by the patients' own physicians at the time of discharge.

patient had ever expressed any of the 16 types of suicidal communications (see Table 4). The interviewer systematically asked every question of every subject but changed wording and explored further as the occasion demanded.

The interview with the patient was identical in content with that of the relative, with the wording changed to fit the patient. In addition, direct observations concerning the mental status were made at the time of the interview, done within 24 hours of admission, and which averaged somewhat over one hour.

Suicidal Communications.—Subjects were asked about suicidal communication at any time in the patients' lives, not only in the recent past. Responses were scored as definite suicidal communications if the patient and/or the informant believed that the patient seriously meant the communication at the time he made it and that the communication was a reflection of a disturbed and unusual mental state. If either the patient or informant gave evidence of a definite communication, even if the other denied or minimized it, the communication was still scored as definite. Not included were the patient's prudent attempts to arrange his affairs (for example, making a will or buying a family burial plot) in the absence of morbid preoccupation with death.

Diagnostic Criteria.—The patients studied were divided into 3 major diagnostic groups: manic-depressive disease, chronic alcoholism, and a miscellaneous group (Table 3). The diagnostic criteria used for

diagnosing manic-depressive disease,⁵ schizophrenia, conversion reaction, anxiety reaction, acute and chronic brain syndromes, sociopathic personality, chronic alcoholism, obsessive-compulsive reaction, and mental deficiency were those reported in previous papers (1, 3). Each of these diagnoses was made on the basis of specific symptoms (somatic and psychological) and behavioral disturbances, excluding suicidal communications. The application of rigorous diagnostic criteria left a relatively large undiagnosed group of 14 patients, 16% of the total sample. When diagnoses made by the investigators using the criteria of the study were compared with the diagnoses on discharge, satisfactory agreement was found. For the 48 diagnosed manic-depressive, 44 had a discharge diagnosis included in our definition of this psychiatric entity: manic-depressive disease, psychotic depressive reaction, involutional depression, depressive reaction, or reactive depressive (7 cases of the latter). Of the 9 cases diagnosed alcoholism, 6 had the same discharge diagnosis. The other 3 cases had discharge diagnoses of psychotic depressive reaction or depressive reaction, although in each instance excessive alcoholic intake was noted in the chart. For patients for whom some other specific diagnosis was made, an agreement occurred in 18 of the

⁵ This term is used to include the diagnoses of manic-depressive disease, manic phase; manic-depressive disease, depressed phase; psychotic depressive reaction; and involutional psychotic reaction, depressive type. Reasons for including all 3 kinds of depressions under this one term have been discussed previously (3). Perhaps a more usual name for this group of terms is affective reactions.

TABLE 3
CHARACTERISTICS OF THE GROUP STUDIED

Diagnostic Group	Number and Sex			Mean Age \pm Std. Dev.		
	Men	Women	Total	Men	Women	Total
Manic-depressive disease*	19	29	48	51 \pm 15	47 \pm 16	48 \pm 16
Miscellaneous group†	5	25	30	22 \pm 6	43 \pm 17	39 \pm 17
Chronic alcoholism	6	3	9	44 \pm 10	37 \pm 14	42 \pm 12
Entire group	30	57	87	45 \pm 17	44 \pm 16	45 \pm 16

* Includes 41 patients in the depressed phase and 7 patients in the manic phase. The high proportion of manic-depressive patients has also been found in studies reported from other short-term, private psychiatric hospitals (4, 5), where a minimum of one-quarter of the patients have had this diagnosis.

† Chronic brain syndrome—5; schizophrenia—4; conversion reaction—4; sociopathy, obsessive-compulsive reaction, mental deficiency—1 each; undiagnosed—14.

20 cases. In the remaining 10 patients, the investigators were not able to make a specific diagnosis, whereas the discharge diagnoses included schizophrenia, acute brain syndrome, chronic brain syndrome, conversion reaction, passive-aggressive personality, and 5 depressive reactions of various kinds.

Persons Who Had Committed Suicide.—Comparisons will be made between the 48 patients of the present study with manic-depressive disease and 60 patients with the same illness who had committed suicide. These 60 suicides were all of the manic-depressives found in a group of 134 consecutive completed suicides previously studied. Selection, diagnostic criteria, and suicidal communications for the 60 patients have been described previously(2, 3).

Statistical Methods.—The chi square test with appropriate small number corrections was used for statistical comparisons of enumerated data between groups(8). For measurement data, the standard error of the means and standard error of the differences between means were calculated and the significance of the differences tested by

means of the t-test(8). A significance level of 0.05 or better was accepted as being statistically significant.

RESULTS AND DISCUSSION

We shall first describe the characteristics of suicidal communications in the entire group, and then compare and contrast the various diagnostic groups. Next, the correspondence between information given by the informant and by the patient will be analyzed. In the final section a comparison will be made between the present manic-depressives and the previously studied group of completed suicides with the same illness.

THE ENTIRE SAMPLE

Kinds of Communication of Suicidal Ideas.—There were 16 different ways of communicating suicidal intent in the entire group (Table 4). Four categories of communication occurred in more than one-third of the patients. These categories (No. 1-4, Table 4, last column) included state-

TABLE 4
KINDS OF COMMUNICATION OF SUICIDAL IDEAS

Categories of communication	Patients †	Informants †	Either †
	%	%	%
1. Desire to die	26	28	37
2. Better off dead	29	32	40
3. Statement that his family would be better off if he were dead	28	25	37
4. Statement of intent to commit suicide	16*	32*	33
5. Suicide attempts	11	11	14
6. References to methods of committing suicide	11	22	23
7. Dire predictions*	6	8	10
8. References to dying before or with spouse	7	15	16
9. Putting affairs in order, or planning to	6	5	6
10. Can't take it any longer; no other way out	17	21	22
11. References to burial or grave	6	7	7
12. Statement of not being afraid, or being afraid, to die	13	17	18
13. Talk about suicides of others	2	3	3
14. Insistent spouse not buy new things for him	2	1	2
15. Taunts and threats concerning suicide	1	7	7
16. Miscellaneous	0	1	1

* $P < 0.05$

† In this and subsequent tables, the column heads "Patients," "Informants," and "Either" signify suicidal communications according to information received from the patient or the informant or from either, respectively.

x E.g., "I won't be here—get your parents to help you raise the kids"; "I'm going to die; take care of the babies"; "You'd better get me into the hospital before anything happens"; "It feels like I don't have much longer to live"; "Some day you'll find me dead"; "I won't be here tomorrow"; "This is the last time I'll see you."

ments by the patient that he wanted to die, that he would be better off if he were dead, that his family would be better off if he were dead, and that he intended to commit suicide.

Sixty-eight percent of the patients had expressed suicidal ideas in one way or another and 53% had expressed such ideas in one of the 5 more common ways (Table 5).⁶ The communication of suicidal intent in patients admitted to a psychiatric hospital for short-term care is, therefore, high. Most of these statements show a preoccupation with suicide and death. For only 7% of the patients were the suicidal communications thought to be a taunt or threat. Apparently in patients ill enough to be ad-

mitted to a psychiatric hospital, suicidal communications are not considered a way of manipulating the environment for ulterior reasons, but as expressions of feelings of hopelessness and of depressed feelings.

Men and women did not differ significantly with regard to the prevalence of suicidal communications (Tables 4 and 5).

Frequency, Repetitiveness, and Duration of the Suicidal Communications.—Suicidal communications tended to be repetitive, varied, and of recent inception. Sixty-eight percent of the patients who communicated suicidal ideas had made such communications repeatedly. The mean number of the 5 common kinds of communications was 2.49. For 66% of those who had communicated suicidal ideas, no such communications had occurred prior to the year preceding admission, and for 44% not prior to the 3 months preceding admission.

RELATIONSHIP OF COMMUNICATION OF SUICIDAL IDEAS TO CLINICAL DIAGNOSIS

The number of patients, 9, in the chronic alcoholic group is too small for statistical treatment. The number within any one specific diagnostic group in the miscellaneous group is also too small for statistical treatment, but the total miscellaneous group affords a relatively homogenous group with regard to suicidal communications, which

TABLE 5
PROPORTION OF PATIENTS EXPRESSING AT LEAST ONE SUICIDAL IDEA

Group	Categories 1-5			Categories 1-16		
	Patient %	Informant %	Either %	Patient %	Informant %	Either %
Total Sample	43	47	53	54	59	68
By Sex						
Men	56	60	60	60	70	73
Women	39	40	49	51	53	65
By Diagnostic Group						
Manic-depressive	54**	56**	65**	67**	69**	81**
Miscellaneous	13**	23**	27**	27**	33**	43**
Chronic Alcoholic	78	78	78	78	78	78

** $P < 0.01$ when manic-depressives compared with miscellaneous group for the data in the corresponding column.

will be compared with the manic-depressive group.

Kinds of Communications.—Suicidal communications were much more often reported for patients with manic-depressive disease than for those in the miscellaneous group (Table 5).⁷ Eighty-one percent of the manic-depressives made suicidal communications, as compared with only 43% of the miscellaneous group. When the comparison is limited to communications in categories 1 to 5 only, 65% of the manic-depressives, compared to only 27% of the miscellaneous group, made suicidal communications. Patients with manic-depressive disease who are ill enough to be hospitalized have a

very high prevalence of suicidal communications.

When comparisons are made for the particular ways of communicating suicidal intent, the manic-depressives show a significantly higher proportion in 4 communication categories—statements by the patient that he would be better off dead, that his family would be better off if he were dead, that he intends to commit suicide, and that he cannot take it any longer (Table 6, last column). Additionally, a higher proportion of the manic-depressives use 14 of the 16 categories of communication, while a higher proportion of the miscellaneous group occurs in only 2 categories.

The high frequency of suicidal communications in patients with manic-depressive disease raises the question as to whether the examiner did in fact use suicidal communications as a criterion for diagnosing manic-depressive disease, despite the decision that

⁷ Because of the few patients within any one diagnostic category, e.g., conversion reaction, schizophrenia, etc., in the miscellaneous group, it is not possible to conclude from this study that none of these diagnostic categories has a high prevalence of suicidal communications.

TABLE 6
KINDS OF COMMUNICATION OF SUICIDAL IDEAS : MANIC-DEPRESSIVE DISEASE
VERSUS MISCELLANEOUS GROUP

Categories of Communication	Patients		Informants		Either	
	M-D	Misc.	M-D	Misc.	M-D	Misc.
	Dis. %	Grp. %	Dis. %	Grp. %	Dis. %	Grp. %
1. Desire to die	29	13	25	20	40	28
2. Better off dead	40**	7**	37*	17*	52**	17**
3. Statement that his family would be better off if he were dead	40**	3**	31*	10*	46**	10**
4. Statement of intent to commit suicide	23*	0*	35*	10*	40**	10**
5. Suicide attempts	21*	0*	15	3	21	3
6. References to methods of committing suicide	17	0	21	10	27	10
7. Dire predictions	8	3	10	0	15	3
8. References to dying before or with spouse	12	0	21	7	23	7
9. Putting affairs in order, or planning to	8	3	8	0	10	3
10. Can't take it any longer; no other way out	21	13	29*	7*	33*	15*
11. References to burial or grave	8	3	12	0	8	3
12. Statement of not being afraid, or being afraid to die	17	7	19	13	21	15
13. Talk about suicides of others	4	0	4	0	6	0
14. Insistent spouse not buy new things for him	4	0	2	0	4	0
15. Taunts and threats concerning suicide	0	0	4	13	4	13
16. Miscellaneous	0	0	0	3	0	4

* $P < 0.05$ when manic-depressives compared with miscellaneous groups for the data within each column.

** $P < 0.01$ for same comparisons as in single starred footnote.

the diagnosis should be made on the basis of other criteria only. However, the independence of the diagnosis from considerations of suicidal communication can be demonstrated by the facts that: 1. Other classic symptoms of depression⁸ were uniformly present. Of the 41 patients in the depressed phase (Table 3), all except 2 had 8 or more of the 15 leading symptoms of depression. 2. The course of the illness showed the distinctive pattern of manic-depressive disease: episodic and late onset. In 51% of the patients diagnosed manic-depressive disease there was a history of a previous attack with an interval free of symptoms prior to the current episode. In 53% of cases the age of onset (date of the first attack) was over 40. In the miscellaneous group (excluding the 5 with chronic brain syndrome) (Table 3), in contrast, only 20% became ill after age 40 and only 8% had had a previous episode of illness with an apparently symptom-free interval following it. Nor did the previous episode described resemble an episode of manic-depressive disease.

⁸ Fifteen symptoms were chosen as particularly diagnostic of the depressed phase: anorexia, weight loss, diminished libido including impotence or frigidity, difficulty falling asleep, sleeping fitfully, early morning waking, complaint of getting no sleep, low mood, fear of losing mind, thoughts of never becoming well again, hopeless future outlook, complaint of poor concentration, complaint of poor memory, complaint of not thinking clearly, and complaint that speed of thinking was diminished. Other symptoms common in manic-depressive disease (6, 7), feelings of guilt and worthlessness, and delusions of poverty and sin, were used as supporting evidence.

Frequency, Repetitiveness, and Duration of the Suicidal Communications.—The manic-depressive patients who communicated their suicidal intentions showed a tendency to communicate in a greater number of different ways than did the miscellaneous group, 4.0 vs. 2.0. This tendency reached statistical significance for the patients' reports but not for the informants' reports. There were no significant differences between diagnostic groups with regard to repetitiveness of suicidal communications or with regard to duration of communication. As might have been expected, because of the episodic nature of manic-depressive disease, there was a tendency for the manic-depressives to have a shorter duration of suicidal communications. Of the patients who communicated, only 22% of the manic-depressives, compared with 57% of the miscellaneous group, had first communicated their suicidal intentions more than one year prior to admission.

Influence of Age and Sex.—Since the manic-depressive group, when compared with the miscellaneous group, was older and contained more men (Table 3), the question arose as to whether sex and age rather than diagnosis may have explained the greater proportion giving suicidal communications in the manic-depressive group. That sex or age was not the determining factor was shown by the findings that in the entire group and within each diagnostic group, no significant differences in communication occurred between the sexes or between young and old. There was a slight but insignificant tendency for men to com-

TABLE 7
ANSWERS TO PSYCHIATRISTS' QUESTIONNAIRES

Diagnostic Group	Told psychia- trist of suicidal ideas	Told someone else of suicidal ideas	Attempted suicide	Any suicidal communication	Possibility of suicide was a factor in hos- pital admission
	%	%	%	%	%
Manic-depressive disease	25**	25**	13	40**	67**
Miscellaneous group	0**	0**	0	0**	17**
Alcoholism	0	13	13	25	50 ^a
Total group	14	15	8	25	48

** $P < 0.01$ when manic-depressives are compared with the miscellaneous group within each column.

municate suicidal ideas more than women, but this was balanced by a slight tendency for the younger patients to communicate more than the older ones.

Patients with Chronic Alcoholism.—Although there were too few patients in the alcoholic group for statistical treatment, the alcoholics appear to be more like the manic-depressives than the miscellaneous group, in that a high proportion communicate suicidal ideas (Table 5). To demonstrate this similarity satisfactorily, a larger number of alcoholics would have to be studied.

Questionnaire to Patients' Psychiatrists.—The results of this questionnaire are consistent with the results already reported (Table 7). Physicians reported a relatively high prevalence of communication of suicidal intent for the manic-depressives (and the alcoholics) and a complete absence in the miscellaneous group.⁹ The fact that higher figures were obtained for each diagnostic group, respectively, by the investigators than by the private physician (compare Tables 5 and 7) probably results from the

⁹ The diagnostic groups were those determined by the investigators. The questionnaires were answered by the attending psychiatrists independently of the investigators' diagnoses. The correlation is, therefore, all the more striking.

investigators' use of a systematic interview inquiring specifically into suicidal communications. Whether the more complete eliciting of suicidal ideas by questionnaire has practical clinical usefulness is yet to be determined. The attending psychiatrist was also asked whether the possibility of suicide had been a reason for deciding to admit the patient. The manic-depressive group when compared with the miscellaneous group was admitted significantly more frequently because of the possibility of suicide.

CORRESPONDENCE BETWEEN INFORMATION FROM PATIENTS AND FROM INFORMANTS

A survey of Tables 4 through 6 indicates that patients and informants differed little in the proportions reporting particular categories of suicidal communication or reporting patients as giving any suicidal communication, although a few more informants than patients gave positive responses.

When the answers of each patient were compared with those of his own informant, a high degree of agreement was again found (Table 8). The amount of agreement between patients and their informants did not differ significantly between diagnostic groups. Agreement was higher when the

TABLE 8
CORRESPONDENCE BETWEEN PATIENTS' AND INFORMANTS' RESPONSES
CONCERNING SUICIDAL COMMUNICATIONS

Categories of Communication	Manic-depressive disease		Miscellaneous group		Alcoholism		Total sample	
	No.*	%†	No.*	%†	No.*	%†	No.*	%†
1. Desire to die	46	80	8	75	29	76	83	78
2. Better off dead	46	70	8	88	29	89	83	78
3. Statement that his family would be better off if he were dead	46	78	8	75	29	93	83	83
4. Statement of intent to commit suicide	46	80	8	50	29	89	83	81
5. Suicide attempts	46	96	8	100	29	100	83	98
1-5 Total	230	81	40	78	145	90	415	84
1-5 At least one + in any of the 5 categories	46	85	8	75	29	79	83	82

* No. = Number of possible agreements or disagreements for any category or combination of categories when each patient's answer was compared with his own informant's. The numbers are not identical with those in Table 3, column 3, because in 2, 1, 1, and 4 instances, respectively, it was not possible to do a complete interview with the patient and his informant.

† Per cent agreement between the patient and his own informant. The agreement could be a positive one—both answered affirmatively—or a negative one—both answered negatively.

communication was by means of an actual suicide attempt than when it was purely verbal. In addition to analyzing total agreements between the patient and his informant, affirmative answers alone were analyzed by interviewing both the patient and the informant. In categories 1 to 5, 41 positive responses were given only by informants, compared with 27 positive responses given by patients only (Table 9). This is further evidence that informants gave more positive responses than did the patients themselves. This excess of positive responses, however, is strikingly limited to category 4, the specific statement of intent to commit suicide. There is a 107% gain in information with regard to category 4, compared with an average gain of only 31% for the remaining categories combined. Apparently patients either tend to forget having made statements of intent to commit suicide or are less willing to admit having made such statements than to admit other statements concerning death and suicide.

The method of study previously outlined indicated that informants were always interviewed before the patients, and since they were interviewed first and tended to give more positive responses than the patients, differences cannot reasonably be

attributed to examiner bias.¹⁰ If such bias existed, it should have been in the direction of increasing the prevalence of communications reported by the patients, based on the prior information obtained from the informant. Further evidence that examiner bias was not important is the agreement of our results with those of Cassidy, *et al.* (6) who showed that manic-depressive patients, when asked only one question about having had suicidal thoughts, gave a positive answer in 45% of cases. In the present study, no single question elicited more than a 40% positive answer from the manic-depressives (Table 6). It was concluded, therefore, that reports of suicidal communications by the patients in this study were probably not falsely high.

COMPARISON OF THE PRESENT GROUP OF MANIC-DEPRESSIVES WITH A PREVIOUSLY STUDIED GROUP OF COMPLETED SUICIDES WITH THE SAME ILLNESS

The purpose of this comparison is to ascertain whether the communication of

¹⁰ To exclude bias rigorously, it would have been necessary to vary randomly the order of interviewing the patient and the informant and not to permit the same investigator to interview both a patient and his corresponding informant.

TABLE 9
CORRESPONDENCE BETWEEN PATIENTS' AND INFORMANTS' POSITIVE RESPONSES
CONCERNING SUICIDAL COMMUNICATIONS FOR THE TOTAL SAMPLE*

Categories of Communication	A Both positive	B Pt. only positive	C Inf. only positive	% Increase [†]
1. Desire to die	14	9	9	39%
2. Better off dead	17	7	11	46%
3. Statement that his family would be better off if he were dead	16	8	6	25%
4. Statement of intent to commit suicide	13	1	15	107%
5. Suicide attempts	10	2	0	0%
1-5 Total	70	27	41	42%
1-5 At least one + in any of the 5 categories	31	7	8	21%

* The individual diagnostic groups each showed the same pattern of differences as did the total sample.

† Increase in positive answers resulting from interviewing informants was computed by dividing positive answers by informants only (C) by total patient positive answers (A+B) and multiplying by 100. If category 4 is excluded from the total, and the percentage calculated for the remaining categories, the percentage gain is

26

$\frac{26}{31} \times 100 = 84\%$

57+26

suicidal intent is helpful in assessing the risk of suicide in a patient with manic-depressive disease. An examination of the first two columns in Table 10 indicates that communication is not a differentially helpful factor¹¹, since there are negligible differences between the present group and the completed suicides in the prevalence of suicidal communications.

On the other hand, a comparison of the first and third columns in Table 10 suggests a different conclusion. If the comparison is made only with completed suicides who were hospitalized during the year before suicide, those who committed suicide communicated their intent in every instance, as compared with only 56% of the present group. This difference is not statistically significant because of the small number of completed suicides who had been hospitalized within a year of their suicides. However, the addition of more cases may indicate that for hospitalized manic-depressive patients, communication of suicidal intent may be an important factor in pre-

dicting a serious risk of suicide subsequent to discharge. Also remaining to be studied is the important question of the relationship of suicidal communications in a non-hospitalized group of manic-depressives to completed suicide. The next step, therefore, in this series of studies is to investigate suicidal communications in manic-depressives who are not thought to be ill enough to be hospitalized or who refuse to be hospitalized. The study of such a group would give a definitive answer to the value of ascertaining the presence or absence of suicidal communications in predicting the risk of suicide.

SUMMARY AND CONCLUSIONS

1. A study was made of the suicidal communications of 87 patients admitted to a short-term care, private psychiatric hospital.
2. There is a high prevalence of suicidal communications (68%) in such patients.
3. There were 16 different ways of communicating suicidal intent. The most frequent ways were statements by the patient that he wanted to die, that he would be better off if he were dead, that his family would be better off if he were dead, and that he intended to commit suicide. Each of these was made by at least one-third of the patients.
4. The use of suicidal communication as

TABLE 10

COMMUNICATION OF SUICIDAL INTENT IN MANIC-DEPRESSIVE DISEASE :
COMPARISON OF THE PRESENT GROUP WITH A PREVIOUSLY STUDIED GROUP
OF COMPLETED SUICIDES (2, 3)

Categories of Communication	Present Study	Completed Suicides	
	N=48 % [†]	Entire Group N=60 %	Hospitalized* N=9 %
1. Desire to die	25	25	67
2. Better off dead	37	25	56
3. Statement that his family would be better off if he were dead	31	17	33
4. Statement of intent to commit suicide	35	42	22
5. Suicide attempts	15	23	11
1-5 At least one category +	56	63	100

* Hospitalized in a psychiatric hospital within a year prior to the completed suicide. These 9 patients are part of the group of 60 patients.

[†] Percentages are from informants' reports only (Table 6), since these were the only ones available in the completed suicide group.

a taunt or threat was infrequent, occurring in only 7% of patients. The great majority of communications were, therefore, not perceived as a means of manipulating the environment for ulterior reasons, but seemed rather to be expressions of hopelessness and despair.

5. The suicidal communications tended to be varied and repetitive.

6. The preoccupation with suicide was not a "way of life" for these patients. Over two-thirds of those who communicated suicidal ideas had begun talking about suicide only within one year of admission, and almost one-half within only 3 months prior to admission.

7. Patients with manic-depressive disease showed a much higher prevalence of suicidal communications than did patients in the miscellaneous group.

8. There are frequent references in the psychiatric literature that everyone, or almost everyone, has at some time thought of suicide. It is evident from the findings noted in conclusions 6 and 7 that there is a vast difference between these presumably evanescent and transient thoughts of suicide and the suicidal preoccupations that lead to the suicidal communications described in the present study. These communications do not occur in everybody (in fact, in only one-third of the miscellaneous group, even though they were ill enough to be in a psychiatric hospital) and when they do occur, in the majority of instances they have been present for less than a year. It may very well be that thoughts of suicide in the clinically well persons referred to in the literature are clinically meaningless and unrelated to the suicidal communications and to suicide which may occur in psychiatrically ill patients.

9. It is probable that in patients ill enough to be admitted to a psychiatric hospital those with manic-depressive disease and chronic alcoholism account for the vast majority of patients who make any suicidal communication.

10. There was a high rate of agreement, over 80%, between patients and informants concerning suicidal communications. These

data were obtained by means of a systematic clinical interview in which each question was asked of each patient and informant, and in which all positive answers were explored in detail. The finding of such a high rate of agreement suggests that it is possible to obtain, by means of a systematic interview, reliable and presumably valid information concerning even such a psychologically sensitive area as suicidal preoccupation.

11. There was one category of suicidal communication—the specific statement of intent to commit suicide—that the patients answered affirmatively less frequently than did the informants. Apparently the patients were reluctant to admit to, or did not remember having made, such a specific statement of suicidal intent, although they readily discussed other concerns with death and suicide.

12. The findings in this study of a high rate of suicidal communication in manic-depressive disease and chronic alcoholism are similar to the findings in a group of completed suicides previously studied. It will next be necessary to study ambulatory patients with these illnesses in order to ascertain the value of suicidal communication as an aid in the prevention of suicide.

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EXPERIENCES OF A PSYCHIATRIST AS A MEMBER OF A SURGICAL FACULTY^{1, 2}

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The Departments of Psychiatry and Surgery, University of Louisville School of Medicine, are favorably impressed with the value of collaboration in the teaching of general surgery at both undergraduate and graduate levels. This impression is predicated upon the initial success of an exploratory period of integrative teaching of more than two years' duration, during which time a psychiatrist has been assigned full-time to the Department of Surgery.

His participation has been strictly limited thus far to the area of general surgery; that is, it has not included the surgical specialties such as gynecology and orthopedics. The method has been to attend the regularly scheduled clinical conferences, seminars and teaching ward rounds on the general surgery service in the Department's main teaching facility, the Louisville General Hospital. This is a city-county charitable institution with 170 beds for general surgical patients. Approximately 1,200 major and 1,400 minor operations were done in 1958 upon a total of about 2,000 inpatients and 5,000 outpatients on this service.

Every patient on 2 of the 4 general surgical wards has been seen by the psychiatrist for periods which have varied from brief contact during ward rounds to an accrued maximum of 10 hours. Patients on the other 2 wards and from the clinics have been seen only on referral.

Clinical research has been an integral part of the program and has been concerned with certain studies on pancreatitis and delirium, the results however not being germane to this particular report. Basic research concerning the electrophysiological correlates of animal behavior is just getting underway and will offer further opportu-

nities for collaboration with the surgeons in the future. The point to be made here is that the areas of research initially selected have been those more readily appreciated by the surgeon unsophisticated in psychiatry.

The need for an interdisciplinary approach to integrative teaching is intensified by the lack of teachers who have themselves developed a multidisciplinary method. Collaboration of surgeons and psychiatrists in such teaching has previously been only occasional and largely on a part-time basis, although there are a few exceptions(1, 2). Effective communication has thus been limited and this has persisted despite a recognition of the need by such prominent surgeons, for example, as Cope, DeBakey, Elkin, Janes, Moyer and Price(3). Until teachers in these fields come to know and understand each other, their efforts to facilitate the correlation of information in others must result in only a limited success at best.

The concept of full-time collaboration is considered important for the individual members of the two disciplines to best identify with each other and be thus prepared for a more effective exchange of ideas. Titchener and Levine(4) have outlined some of the common grounds of psychiatry and surgery in a treatise directed in part to the surgeon. More research concerning the psychiatric aspects of surgical patients is needed, but the lesson it teaches will require the presence of the teacher.

The objectives and purposes of integrative teaching have been outlined in the Report of the 1951 Ithaca Conference on Psychiatric Education(5). They are implied in the breadth of modern medical science and concern the facilitation of the correlation of knowledge from diverse areas of emphasis. One of the participants in the Conference made the following comment:

... Let us not lose sight of the fact that what is to be correlated is *information*, and

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not courses, not teachers, not students, not schedules; that where this correlation is to occur, is in the *mind* of someone; that for a student to correlate two facts, he must already possess both facts . . .

We are in agreement with this statement and are of the opinion that medical students, surgical residents and surgeons already have in mind many facts when they come to the clinical discussion concerning their patients. With respect to their psychiatric information, however, there is often a blind spot. Frequently they possess a significant amount of such information but do not trust their observations, fearing that psychiatry is equated with subjectivity and unaware that its data, in many cases, are no more and no less observational than those of other clinical disciplines. Subjectivity is further equated with emotion and, since subjectivity is a bad word, a valuable diagnostic and therapeutic tool accordingly becomes untrustworthy. Emotions are recognized as somehow important, but unscientific, and therefore not capable of being correlated with other data. Furthermore, the process of looking at one's own emotions is recognized as not always a pleasant one.

Although one might characterize the situation in a number of different ways, the most significant problems seem to be those of dualism in the approach to the patient and a certain rigidity in the attitudes of the student or physician towards psychiatry. These attitudes are often colored by denial and by a form of compensation which both obligates and qualifies the individual to form certain opinions of psychiatry which are then applied to the patients. However one characterizes the situation our practical emphasis in teaching would remain unchanged; with a significant amount of information already present, our efforts to facilitate correlation have been just as concerned with attitudes and emotions as with technical and theoretical information. The effort has been to teach primarily in terms of the present and future, with emphasis upon treatment, history taking, the physician-patient relationship and diagnosis by inclusion rather than exclusion.

Two principles have been particularly important in molding our method in teach-

ing. The first concerns our effort to supplement the surgical teaching program without the appearance of doing so by combining parts of two completely separate disciplines. In this respect we have avoided the use of technical jargon as much as possible, and comments and questions concerning any aspect of the patient are encouraged from any source, much in the same way as reported by Early and Gregg(6). When comments are made the effort is directed more toward reinforcing their positive aspects than toward supplying additional data at that particular time. The usual question as to how much is organic and how much psychological has been progressively diminishing in frequency.

The second principle is related to the first in that both have the common aim of preventing dualism in dealing with the patient. It has concerned the role of the psychiatrist and in this respect he has assumed more a role as catalyst than as consultant. Psychiatric consultation from the usual sources has thus continued unchanged. This has not prevented a discussion of these same patients by the psychiatrist in this program. It has, however, helped to avoid a primarily service function rather than one of teaching and it has helped to motivate a wider range of clinical discussion. The implication of this role has been that the psychiatrist was not present only because of the occurrence of overt psychiatric disorders in surgical patients; that he was, in fact, interested in everything pertaining to each patient, though by no means professing to be expert in any field outside his own.

The attitudes of the surgeons have undergone an interesting change since the inception of this program. The psychiatrist was initially faced with skepticism, was then accepted and expected to perform primarily as a psychiatric consultant, and was next placed in the role of internist. At present the clinical discussions are more appropriate to both his multidisciplinary background and his specialty, their content being less oriented toward one facet of the patient to the relative exclusion of others.

The period of initial skepticism was characterized by a sincere politeness on the part of the surgeons, but with little call upon the psychiatrist for comment. Often their

questions, when they did occur, would concern subjects obviously outside the area of psychiatry and which no psychiatrist would logically be expected to discuss even though he knew the answers. This gradually diminished and within 6 months the acceptance of their colleague was symbolized by their offering him an office within their departmental area.

Requests now came with increasing frequency for consultation on patients with overt psychiatric complications. All such requests were met, but with the provision that a concomitant psychiatric consultation be obtained from the usual source and that its recommendations for treatment be followed. Gradually this provision has become routine on the part of the referring surgeons and this routine has persisted despite annual and rotational changes in the house staff. At the same time the reasons for referral have changed. No longer is the presence of psychosis, for example, a sole reason for referral, for now the referral is based more upon an interest in understanding the patient and less to obtain help with a part of the patient that is someone else's business. The traditional and impersonal consultation form is no longer used and the psychiatrist is now asked by the surgeon to see the patient with him.

For a less well-defined and briefer period, the psychiatrist was placed in the role of internist. Although a part of his training had been in internal medicine, he was certified only in psychiatry and took care with the surgeons to stay within the latter role. Despite his lack of definitive response to questions directed to him concerning such subjects as the dosage of digitalis and the effects of transfusion upon tests for sickle cell anemia, the frequency of such questions increased for a few weeks. On one occasion he agreed with the surgeons that the internists had improperly discussed some postoperative syndromes in an interdisciplinary seminar without inviting the surgeons' participation. In the criticism of this;

the psychiatrist's opinion was repeated and its significance reinforced by referring to him as a "certified internist."

SUMMARY

The constant presence of a psychiatrist in a surgical faculty is a powerful motivating force *per se*, and his role in the eyes of the surgeons is of more importance than an active exchange of specific psychiatric information in the successful inception of a collaborative teaching program of this sort. Following such inception an increasing exchange of ideas will take place. The need for such an exchange between psychiatry and surgery is at least as great as is the need for correlative teaching in general.

Some observations of a psychiatrist attempting together with a surgical faculty to meet this need have been described. Our program is young, and there are usually several good ways of doing the same thing. For these reasons, and because of the wide variation in local conditions, we do not offer this report as a model which is necessarily applicable in other medical schools. We do hope, however, that there will be an increasing collaboration among psychiatrists and surgeons in the correlative teaching of surgery.

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TRAINING IN PSYCHOTHERAPY : THE USE OF MARRIAGE COUNSELING IN A UNIVERSITY TEACHING CLINIC¹

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Teaching psychotherapy has many problems. There are too few therapists for too many patients. Treatment methods are frequently based on social and economic status, the availability of teachers experienced in analysis and other factors, rather than on evidence favoring one method or another (8).

One difficulty involves conceptualization. Dogmatic attempts at definition often develop technical jargon, formulae and rituals of procedure employed almost mechanically and automatically. Pseudo-disagreement may occur when therapists employ different frames of reference without realizing it. "Schools" of psychiatry have fought over which level of communication was most important: intrapersonal, interpersonal, or social. The therapeutic effectiveness of various possible interpretations has not been scientifically proven (4). Ideas about "cause" have shifted from the simple cause-effect relationship to "feedback" or "spiral" systems (16).

Another difficulty involves experience. The therapist learns ultimately by treating patients. The beginner is hindered by inexperience, feelings of inadequacy and anxiety. He often feels overwhelmed by the need to explore the depths of the total personality and the complexity of past relationships. He may flounder and compensate by speculation, theory and fantasy. When personality problems are recognized and examined he can learn to treat more effectively. The mechanical use of psychiatric concepts, psychotherapy and stabilized rituals are often monotonously and inappropriately employed. Witness the boring and

unimaginative nature of many case readings. Rigidity stifles the corrective emotional experience (3).

Psychotherapists have attempted to shorten and improve treatment by experimentation. Adler, Alexander, Ferenczi, Rank and Rado are notable examples (2, 3, 7, 14, 15). The time-honored model of a one-to-one therapeutic relationship is yielding at times to a broader point of view. Often the patient is a part of a group of sick people with whom he interacts, in a sort of *folie à deux, trois* or more (5, 10, 17, 19). These people need to be treated too. It is often not advisable to refer these involved persons to other therapists. The literature reports an increasing number of therapists who treat more than one member of a family (1, 6, 9, 11, 12, 17).

Residents, we believe, should see in operation many methods of helping patients. To meet this need, the department of psychiatry of the University of Pennsylvania School of Medicine, has developed a broad and flexible training program which meets residency requirements. Through the Marriage Council of the Division of Family Study of the department of psychiatry, residents may participate in an interdisciplinary graduate program which includes didactic material, group discussion, direct counseling experience with married couples, and individual supervision. The resident spends one day each week for an academic year at Marriage Council. The staff of Marriage Council from time to time present case discussions to the psychiatric staff and regularly attend case conferences.

Marriage counseling is the process through which a trained counselor assists two persons to develop abilities in resolving to some workable degree, the problems that trouble them in their interpersonal relationships (13). A basic assumption is that all individuals grow to greater adequacy and maturity in their relationships if not blocked by such obstacles as loneliness, fear, hostility, guilt and their displacements, or trans-

¹ Read at the 116th annual meeting of The American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

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ferences which prevent a person from experiencing the present as it really is and hence behaving effectively. New experience in communication is offered, and a search for more realistic solutions of present difficulties is made in an atmosphere of acceptance and understanding. The process is not encumbered with detailed consideration of conflicts in the past, their devious and disguised transferences, or with intense and difficult ventilations of feeling.

If during the counseling process an individual can experience new understanding of himself and his partner and more satisfying ways of communicating, searching, understanding and behaving, he can often apply these to his family life. Experience has shown that for the marriage problem to be dealt with most effectively, the couple should often be treated as a unit by one therapist (13). The following case treated by a senior counselor illustrates the method used at Marriage Council and the kind of presentation given to psychiatric residents for discussion and learning.

A married couple, referred to Marriage Council by a psychiatrist who knew them socially, were in their early thirties, American born, Jewish, married 10 years with 3 sons. Mrs. Jacobs was 5 feet tall, and weighed 175 pounds. She was affable, dramatic and anxious. She complained of obesity and shock at her husband's sexual rejection in finding her obesity unattractive. She wished that her husband were more "masculine," that they could handle finances more satisfactorily. She feared she had "held the reins too tight."

The husband was short and plump with an amorphous quality. At first he denied marital problems, but soon described a strained atmosphere at home, his wife's unwillingness to let him travel in his job, his inability to say no to her, his fear of his wife's anger, his inability to confide in her, his loss of interest in sex, and his repulsion because of her overweight.

The pair had begun to date in their teens and were married in their early twenties, with both families' approval. Their first child was born by Caesarean section 3 years after their marriage. Though Mr. Jacobs earned \$7,500 per year as an administrator and worked as a salesman on weekends, they had little money for current expenses because of debt.

The wife seemed to be an aggressive, dependent woman still tied to her mother. She was frustrated and angry with her mother's

critical attitude toward her, but was unable to face and deal with her feelings. Though she indicated interest in more sexual activity, there was "something in her that went against it." She had little capacity to postpone gratification and used food as a major source of satisfaction.

The husband was a passive, dependent man. He was hostile in a quiet way, preferring to avoid difficulty. He evaded responsibility by his passivity and had little capacity for self discipline. He showed strength in his education and job achievement, but had low self regard.

Mr. and Mrs. Jacobs were both seen on a weekly basis for 7 months in a total of 24 individual and 5 joint interviews. Initially the therapist concentrated on strengthening Mrs. Jacobs' capacities to deal with everyday life. Mrs. Jacobs' marital problems were intertwined with her difficulties with her mother. As she more adequately handled her mother's interventions in her marriage, her anxiety abated and her self-esteem grew. She began to express resentment about her mother's domination, but added apologetically that her mother "wanted her to be happy or was doing this for her welfare." Mrs. Jacobs realized that when she felt her mother's displeasure she felt a "terrible emptiness," and would eat. After this realization she started to do something about her weight. She had inadequate knowledge of her sexual function and grew up with attitudes that sex was bad, undesirable, and she felt guilty about it. Considerable time was spent clarifying anatomical facts and attitudes about sexuality. She then realized that she had not minded being fat because it made her less attractive sexually, and developed a capacity to confide romantic fantasies to the therapist.

Mrs. Jacobs had felt she had to "make it up to her mother because her father had spent time in prison." In treatment she began to wonder whether her mother had after all been such a victim. She began to recognize that her mother had made the children feel guilty because of her suffering, although she had actually had a part in her husband's offense.

Mr. Jacobs talked about many phases of development. He described sexual experiences, his difficulty in self-assertion and the hostility that underlay his behavior. He brought up his mother's directions of "never answer back, never strike back, tomorrow will be another day."

Mrs. Jacobs had been relating to her husband in the dominating way that her mother had treated her. When her mother made another unreasonable request of her son-in-law, he finally refused, and his wife backed him up despite the mother's rage. Mrs. Jacobs reported

she felt differently after this non-complying expression with her mother and found that she could say no to her without becoming upset.

The couple worked out a financial plan together and assumed more adequate responsibilities as parents. Mrs. Jacobs joined in community activities as an outlet for her aggressive needs and continued to lose weight. At this point counseling was concluded.

A husband and wife with a marital problem precipitated by his sexual rejection of her were seen in a triadic counseling relationship over a 7 month period. The therapist set up an accepting relationship with both, emphasizing their strengths, avoiding sore points. This helped them to be less defensive and enabled them to bring up real issues. The strong participating relationship with the therapist helped the wife to stand up to her domineering mother and achieve insight into her hunger for food. By discovering better ways to handle her day-to-day problems she developed increased strength and self-esteem and became able to assess her attitudes about herself and sex. She could face her disappointments in, and hostility to, her husband and replace romantic fantasy with a real co-operating relationship. She lost weight, became more attractive physically and with the decrease in mutual hostility, there developed affectionate, friendly and cooperative family relationships.

The therapist's encouragement and the new found support from his wife enabled the husband to assert himself against his mother-in-law. Binding together they were able to function as a team in handling their children and other life stresses.

CONCLUSION AND SUMMARY

From the example it is seen that favorable therapeutic results took place without going into multiple details concerning orality and intensive personality analysis.

To illustrate these techniques as they were used in a marriage counseling case, the significant details of a serious interpersonal conflict precipitated when the husband rejected his obese wife, have been presented. Both partners were seen individually and jointly by one therapist. The therapist focused on the day-to-day experience, eliciting the patient's feelings about reality situ-

ations which involved relationships to each other, parents and in-laws. Interpretations were kept to a minimum and were expressed simply, without technical terms. Ego strengths were supported. Ventilation of hostility was kept within tolerable limits. Solutions to difficulties evolved without going into genetics, details of personality structure, or the analysis of oral eroticism involved in obesity. The frame of reference was generally confined to present reality only occasionally moving into the past. The level of communication was interpersonal with occasional intrapersonal accents. The downward causal "spirals" of hostility, alienation, guilt and inadequacy were replaced with upward "spirals" of acceptance, increasing confidence, self-assertion and self-esteem through the corrective emotional experience with the therapist.

This presentation does not imply that detailed microscopic analysis and intensive psychotherapy should not be employed in some cases and the psychiatric residents familiarized with them. Psychotherapy is an inadequately conceptualized subject. It is difficult to teach. Learning should involve a variety of techniques. Residents need experience in experimental enrichment as well as in conventional patterns of psychotherapy. To answer partially this need, training for residents has been provided in the Marriage Counseling Clinic of the Division of Family Study of the University of Pennsylvania.

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EXPERIENCES WITH LARGE SCALE INTERHOSPITAL COOPERATIVE RESEARCH IN CHEMOTHERAPY¹

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The Executive Committee of the Veterans Administration Cooperative Studies of Chemotherapy in Psychiatry has accorded me the privilege of presenting a sketch of the program which has developed during the past 5 years into a series of 5 studies of the effects of phenothiazine drugs upon schizophrenic patients, and of "psychic energizing" drugs upon apathetic schizophrenics and depressed patients.

This series of cooperative studies had its beginning with a conference of representatives from interested hospitals in 1955. Details of the development of an organization for research, the problems that arose in selection of questions suitable for cooperative study, design of methodologically sound, safe and practical protocols, and interpretation of the results of the studies are presented elsewhere(1).

When the program began, the VA Department of Medicine and Surgery had passed through its post-war organizational trials. In its psychiatric services had been created an effective medical care group accustomed to working together in an interdisciplinary fashion. The group was greatly concerned about the impact of what was then the future use of ataractic drugs in the treatment of its patients. Perhaps the existence of such a setting, the challenge of such a problem, and the inspirations provided by administrators and by research-minded outside advisors, are the basic requirements for successful cooperative studies. An initial protocol was devised, and subsequent studies have been designed, through a series of conferences with individuals from the hospitals attending on a voluntary basis, aided by representatives from many ancillary services and statisticians. Final decision as to participation in

each study has been the prerogative of each hospital and its management.

How large scale have been our cooperative efforts? Figure 1 shows the location of each hospital which has participated in at least one study. We have had from 27 to 37 hospitals in each study; the patient populations have varied from 404 to 805. In the first two studies some 6,000 comparisons between drugs on criterion and background variables had to be computed; in the third 1,080 comparisons were made. Such computational loads, of course, required planning for the use of high-speed computers for data processing. Practical, but manageable problems in communication arose from the geographical spread, the size of populations studied, the presence of a rich variety of points of view in the multitude of observers, and the awesome amounts of data that had to be winnowed for meaningful conclusions. The circumstances presented a severe challenge to the reputed efficacy of the study drugs.

We have now completed 4 studies, are engaged in a fifth, and planning the sixth. All have involved a centralized randomization of the studied population by hospital units and have been of the double blind type. The efficient willing cooperation of the pharmaceutical firms has made it possible for us to give all medications orally in identical capsules. The prime instrument of evaluation has been the Multidimensional Scale for Rating Psychiatric Patients (MSRPP), commonly termed the Lorr scale, although we have used a number of other devices in the studies. We have especially attempted to record laboratory findings and clinical evidences of side effects in a way allowing for summarization. The size of our patient populations has made it possible to use powerful statistical methods, particularly the analysis of covariance, and to investigate something more than 25 variables simultaneously in each study.

The first two studies, in 1957, were linked into one articulated study(2). The first in-

¹ Read at the 116th annual meeting of The American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

The VA Cooperative Chemotherapy Studies in Psychiatry.

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FIGURE 1

Cooperative Studies in Psychiatry



PARTICIPATING VA HOSPITALS ●

volved a comparison of chlorpromazine and promazine, in fixed dosage over a period of 3 months, in the treatment of acute and chronic schizophrenic men, with phenobarbital and an inert material for control substances. The second study was a "cross-over" type of extension involving treatment for a second 3 month period of a majority of the patients in the first study. Study III, in 1958, was a comparison of the effects of chlorpromazine, perphenazine, prochlorperazine, trifluoperazine, and mepazine, on newly admitted schizophrenic men, with phenobarbital as a control substance⁽³⁾. The drugs were administered for a total of 3 months, in fixed dosage for the first month, and in a flexible dosage pattern for the remainder of the study. The fourth study, in 1959, now in the analysis stage, involved an examination of the effectiveness upon chronically ill schizophrenic men on a maintenance regimen of chlorpromazine, of a combination of a fixed dose of chlorpromazine and one of the "psychic-energizing" substances (isocarboxazid, imipramine, dextroamphetamine or trifluoperazine) with an

inert substance as a control. The energizing drugs were administered for a total of 5 months, in fixed dosage for the first month and in a flexible dosage pattern for the rest of the time. The fifth study, now underway, is designed to examine the effectiveness of "psychic energizers" (isocarboxazid, imipramine, dextroamphetamine with amobarbital), again with a control inert substance, in anti-depressant application, with both men and women. Again there is an initial fixed dosage plan, followed by flexible dosage for the major portion of the treatment time of up to three months.³

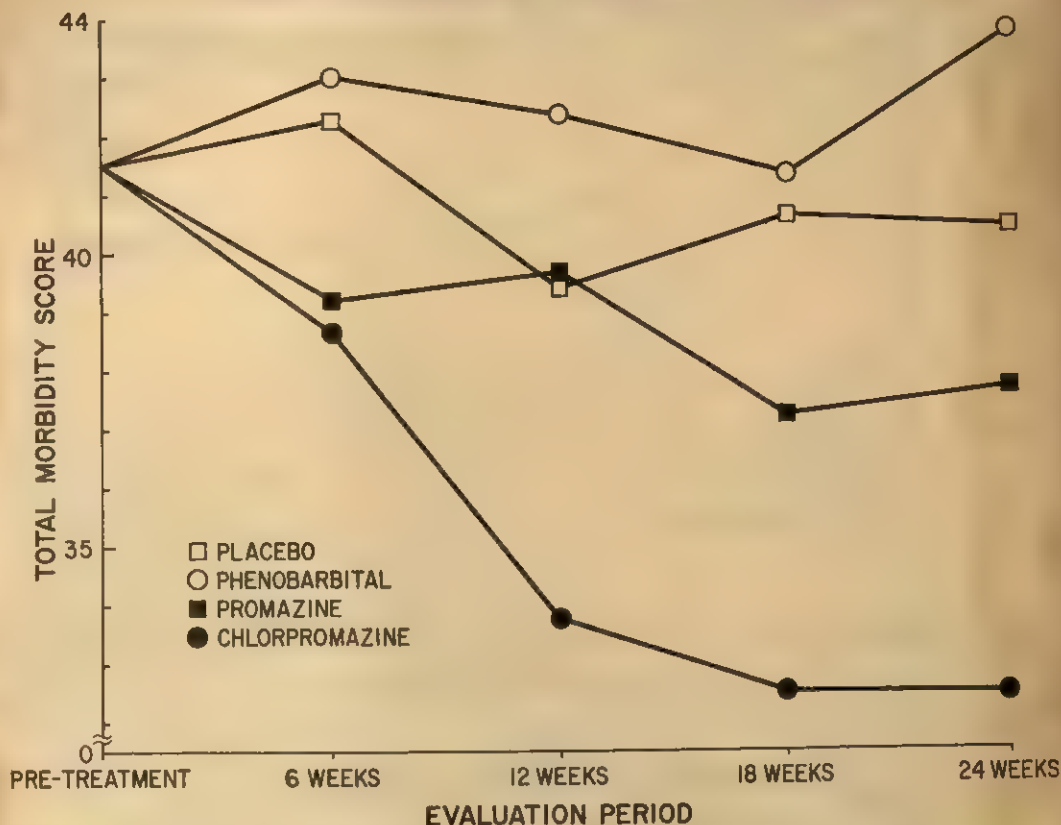
The results of the studies completed⁴ will be published in appropriate professional

³ The generic and trade names of drugs referred to are: chlorpromazine (Thorazine), promazine (Sparine), perphenazine (Trilafon), prochlorperazine (Compazine), trifluoperazine (Vesprin), mepazine (Pacatal), isocarboxazid (Marplan), imipramine (Tofranil), dextroamphetamine (Dexedrine), trifluoperazine (Stelazine), dextroamphetamine with amobarbital (Dexamyl).

⁴ Detailed information can be obtained by writing the Central Neuropsychiatric Research Laboratory at Perry Point, Md.

FIGURE 2

Mean Total Morbidity Scores After 6 And 12 Weeks of Treatment



journals, but by a brief mention of some of the results we shall illustrate their form. Necessarily the language in which the results are expressed is derived from the measuring instruments and the method of analysis. We are using the most comprehensive single criterion: the total morbidity score derived from the Lorr scale. A decrease in this score is equivalent to a reduction in symptomatology. In study one, chlorpromazine was shown to be superior to promazine in the over-all reduction of symptomatology as illustrated in Figure 2. Incidentally, all differences discussed are statistically significant at or beyond the 5% level of confidence. In study II (Figure 3) it is apparent that this superiority was maintained if treatment were continued for a second 3 months. Figure 4, based on the third study, shows that 4 phenothiazines: chlorpromazine, prochlorperazine, trifluorpromazine, and perphenazine, were demonstra-

bly more effective than one, mepazine, although all 5 were clearly superior to phenobarbital in reduction of total morbidity. There were no significant differences among the 4 more effective drugs, even though the difference shown between prochlorperazine and trifluorpromazine may appear, on the graph, to approach significance.

There is another way in which we can present, generally, findings from these studies of phenothiazines. The Lorr scale is broken up into 11 factors, each representing symptom clusters. In Table 1 are shown the effects of phenothiazines on the Lorr factors, as compared with phenobarbital. The left side of the table shows the results from the first study and the right hand side from the third, each dealing with a different population of schizophrenic men. The first 3 factors are shown to have been altered in a significant way by all of the phenothiazines. The rest of the chart shows the factors upon

FIGURE 3
Mean Total Morbidity Scores At Six-Weeks Intervals

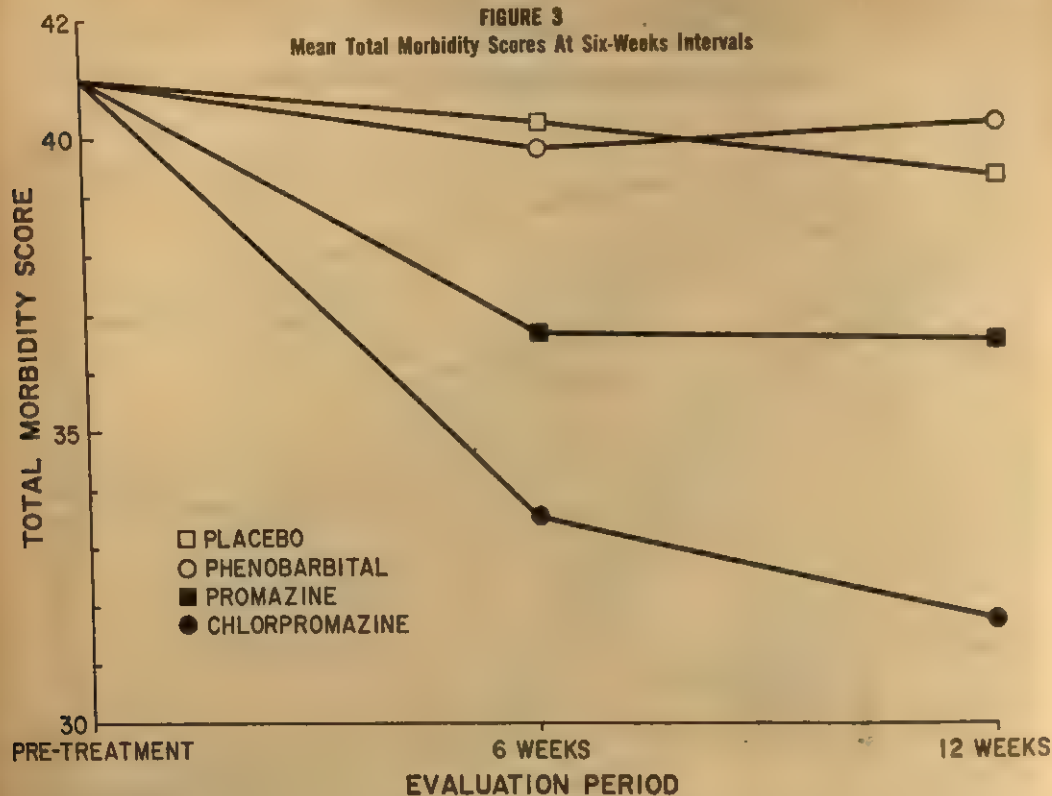


FIGURE 4
Mean Total Morbidity Scores After 4 And 12 Weeks Of Treatment

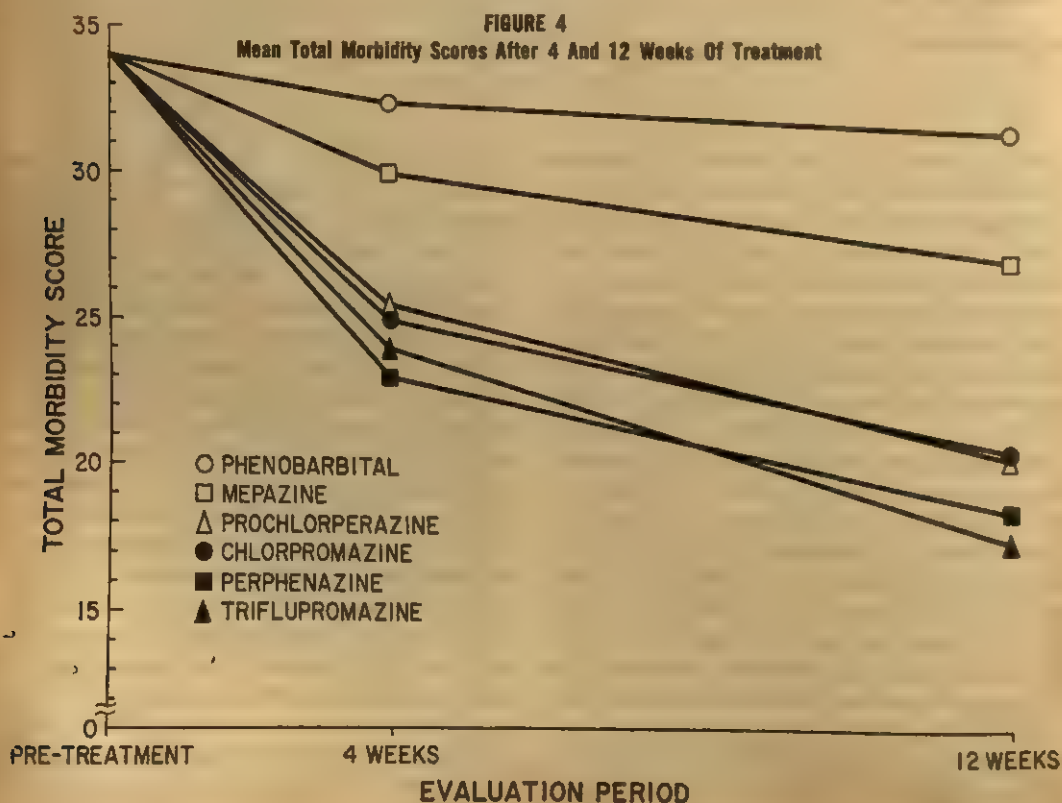


TABLE 1

Symptomatic Changes Of Patients Treated With Phenothiazines Compared with Phenobarbital Over A Twelve Week Period

MSRPP FACTORS	PROJECT ONE		PROJECT THREE				
	CHLORPROMAZINE	PROMAZINE	CHLORPROMAZINE	PROCHLORPERAZINE	PERPHENAZINE	TRIFLUOPROMAZINE	MEPAZINE
RESISTIVENESS	*	*	*	*	*	*	*
BELLIGERENCE	*	*	*	*	*	*	*
THINKING DISTURBANCE	*	*	*	*	*	*	*
PERCEPTUAL DISTORTION	*	*	*	*	*	*	*
MANNERISMS	*	*	*	*	*	*	*
PARANOID PROJECTION			*	*	*	*	*
ACTIVITY LEVEL				*	*		
WITHDRAWAL	*					*	
SELF DEPRECIATION VS GRANDIOSE EXPANSIVENESS	*						
MELANCHOLY AGITATION							
RETARDED DEPRESSION VS MANIC EXCITEMENT							

*SIGNIFICANT AT .05 LEVEL AFTER ANALYSIS OF MULTIPLE COVARIANCE.

which a given drug was more effective than phenobarbital. Some differentiation in areas of drug effectiveness becomes apparent as the list is descended.

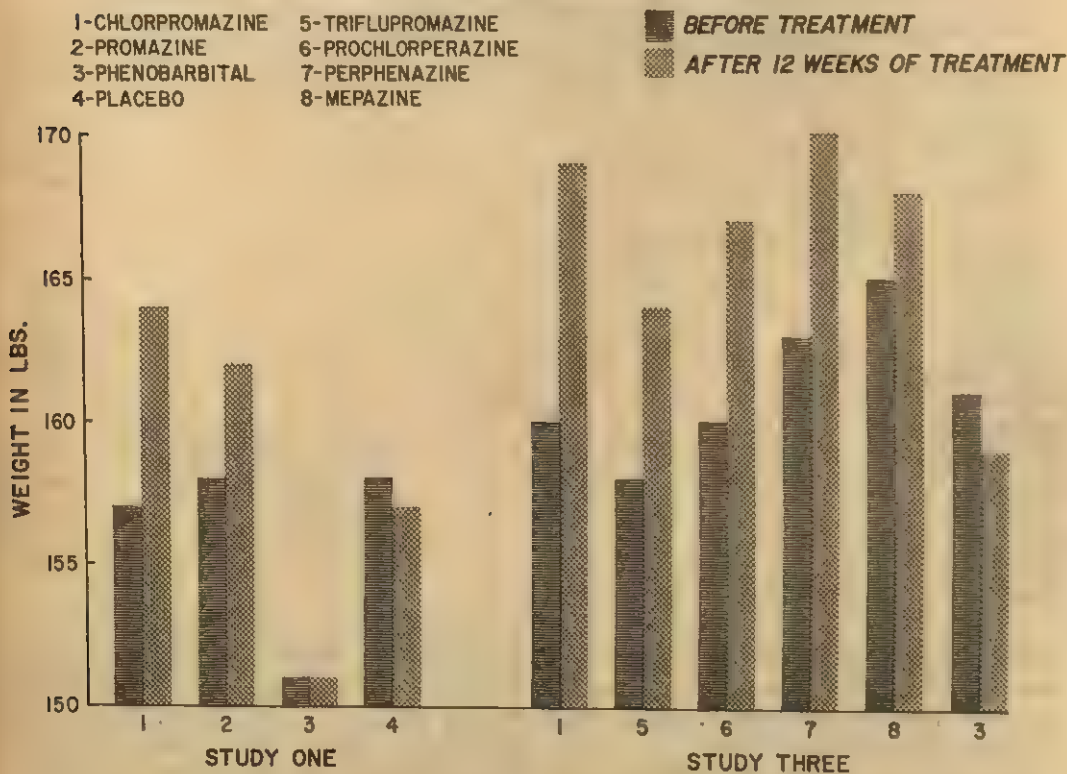
Additional methodological studies have included a study of agreement between raters using the Lorr scale which yielded for total morbidity an interclass correlation of .82(4); and a determination of whether the change in clinical condition during the course of study III was due to any of the control variables (age, marital status, duration of illness and so on). A summary of the laboratory findings and side effects experienced in study III has been prepared, showing the inherent variability in a schizophrenic population against which current deviations possibly due to drug effects must be evaluated(5). This summary shows no serious side effects to have been experienced, and a relatively low incidence of Parkinsonian-like symptoms, other clinically evident side effects, or laboratory abnormalities. An examination of the weight gain in each drug group has been carried out because of the problem described by Planansky arising from the use of "tranquilizing treatment on a mass scale, namely, obesity on an epidemiological scale"(6). Figure 5 shows the average change in

weight over 3 months for each drug group, and phenobarbital, in studies I and III. It will be noted that all of the groups receiving phenothiazines gained weight. Specifically, the groups on chlorpromazine gained an average of 7 to 8 pounds, whereas the group on promazine gained an average of 4.5 pounds, and the group on mepazine gained an average of 2.5 pounds.

As the program has progressed, there has been continuing assessment of the value of the measuring devices, and consideration of methods for their improvement. Most importantly, employment of the Lorr scale by a large number of psychologists, psychiatrists, and nursing personnel in a clinical setting resulted in many suggestions for its improvement. During the summer of 1959, with the cooperation of the staffs of the hospitals and with the assistance of the Central Neuropsychiatric Research Laboratory, a revision was designed and developed in the Neuropsychiatric Research Laboratory of the Veterans Benefits Office in Washington. This revision led to an interview scale, the Inpatient Multidimensional Psychiatric Scale (IMPS), which, together with a new ward observation scale, the Psychotic Reaction Profile (PRP) developed meanwhile by Dr. Lorr, was put into use in our fourth and

FIGURE 5

Weight Changes With Phenothiazine Treatment



fifth studies. It is expected that out of this testing will come a greatly improved instrument for patient description and for measurement of treatment effects. Besides improving the old, we have recognized with increasing clarity the need to account for the possible significance of the attitudes of staff and patients on the demonstrated effects of the drugs. In the fourth and fifth studies we have introduced scales designed to produce information about the attitudes of psychiatrists, clinical psychologists, social workers, nurses, nursing assistants, and patients toward mental illness, and towards the applicability of chemical methods to its treatment. In the fifth study, we have introduced, too, a follow-up step with the hope that we will be able to learn something of the natural history of depressions and the extent to which beneficial effects of treatment may persist.

The existence of the cooperative studies has, as it was hoped, engendered concomitant studies of the cooperative study pa-

tients by individual hospital investigators. These have included examinations of electroencephalographic changes, drug excretion rates and psychological effects. These smaller specialized studies have broadened the scope of the investigation of the role of chemotherapeutic agents in mental illnesses and provided suggestions for more detailed investigation.

The studies have been truly cooperative, devised and executed by the investigators who are responsible in each hospital for their completion; coordinated through an executive committee; and operationally controlled by the Central Neuropsychiatric Research Laboratory which supervises the randomization procedures, prepares the forms and manages the planning and execution of the analyses. Working together in this way we have been able to reduce the lead time in the production of studies from 1½ years to 6 months, and have been able to devise and execute increasingly complex and sophisticated studies while maintaining

flexibility and an attitude of venturesome inquiry. We have shown that the phenothiazine drugs are effective in reducing the symptomatology of schizophrenic patients and that there is no difference in the effectiveness of one as compared with another of four of those drugs examined in our study III. The program has provided reliable information about the drugs and about new methods and measures to the profession at large, and has stimulated research interest and developed better informed habits of observation among our personnel.

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THE CLINICAL SCREENING OF PSYCHOPHARMACOTHERAPEUTIC AGENTS: A CONSIDERATION OF METHODOLOGY¹

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HAROLD H. MORRIS, M.D.²

The initial screening of psychopharmacotherapeutic agents is an important area of research in psychiatry. It has received little focused discussion in the literature from the standpoint of general approach and methodology. The authors propose to describe and comment upon one approach to problems confronting the investigator in this difficult area in which generally accepted standards of control often must be sacrificed in order to assure maximum safety of the patient and in order to minimize the chance of overlooking subtle or even obvious leads. While many have accumulated far more experience than we in drug screening, we wish to call attention to certain aspects of a program which offers some unusual advantages and opportunities for this type of research activity.

FUNCTIONS OF A PATIENT DRUG SCREENING UNIT

For initial orientation, certain basic functions of a drug screening program might be proposed. These include:

1. The detection of agents which have one or more unique properties of human pharmacological action, an influence upon special mental functions or a normalizing effect upon abnormal mental states or symptoms.
2. The screening out of agents which are inactive or which produce undesirable side effects.
3. The presentation to pharmaceutical companies and other laboratories of preliminary data on a wide range of routine observations of biochemical, physiological and psychological actions, dosage range and clinical psychiatric effects, as well as special leads uncovered in any of these categories.

These data must be rapidly transmissible in standardized form and in readily understandable terms to both drug firm and clinical investigator. Out of the chance observation of the preliminary study can come important hypotheses for definitive test and later better controlled clinical experiments.

DESCRIPTION OF FACILITIES AND MILIEU

In order to set forth a number of our views concerning methodology, it is necessary to sketch briefly certain features of our own set-up which differ from those of many other workers.

Our research facility is located on an 85 bed inpatient psychiatric service of a 3 year old community general hospital in the city of Philadelphia. This service and our research unit have been in operation since the opening of the hospital. The service functions as an inpatient teaching and research center of the Department of Psychiatry of the University of Pennsylvania which is located close by.

The patients come to us from a predominantly lower and middle class socioeconomic urban environment.

The psychiatric service provides short term therapy. The treatment orientation throughout the service is best described as eclectic. Therapeutic approaches of the regular and visiting staff represent a wide range from group and intensive psychoanalytically-oriented psychotherapies to standard physiological treatments.

The general milieu of the service reflects a high degree of patient participation in the day to day policy making and administration. Throughout the service there is no segregation by race, age (adolescence through old age), diagnosis, nor sex (except for separate dormitory space).

The research unit occupies ample space within the physical boundaries of the service.

¹ Read at the 115th annual meeting of The American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

² Department of Psychiatry, University of Pennsylvania and the Mercy-Douglass Hospital.

PERSONNEL

The key members of the research unit staff are full-time in investigative work. They include 2 psychiatrists, a research nurse and an experimental psychologist. The day to day evaluative service of all first year residents and most of the regular clinical staff are also called upon in our drug screening procedures.

ADVANTAGES AND OPPORTUNITIES OF THIS TYPE OF SERVICE FOR PRELIMINARY DRUG SCREENING

Provided certain difficult problems of control can be worked out, we feel that the type of facilities, milieu and personnel described offers certain advantages and special opportunities for effective patient drug screening. In the first place, acutely ill psychotic subjects provide an experimental population which tends to include wider individual ranges of gross psychopathology, patterns of illness less complicated by hospitalization and other therapies and greater responsiveness to therapeutic intervention than chronic hospitalized patients. There is evidence that responses to drugs depend in large measure upon the interaction of drug and numerous other variables difficult to identify, let alone control adequately. It seems justifiable to take the position that subtle drug effects are most likely to occur and, with appropriate procedures, may be best observed on a relatively small, eclectic and intensive treatment service where the features of hospital management, vicissitudes of ward life and amount of attention by personnel are somewhat equated among research subjects, and between them and service patients. Such a service with its heterogeneity of population characteristics and *laissez faire* milieu allows, and indeed calls forth, a wide range of adjustmental behavior for inspection. This is in contrast to the situation on a static and highly structured ward of chronic hospital patients.

A second advantage is the opportunity for intensive and nearly continuous individual surveillance of a relatively small number of subjects (our unit functions most efficiently with 10 to 15 subjects under test at one time).

Multiple independent observers, studying the same phenomena with the same

measuring devices and by similar standards, heighten objectivity and help to circumvent individual blind spots.

The cross checking of phenomena by observers of different professional backgrounds and training, whose self-conceived and actual roles in the hospital life differ, also serves to minimize experimental bias.

The conception and development of such a drug testing operation as a permanent and continuing one provides for the accretion of relevant experience by all involved. This enhances efficiency of both clinical and research personnel. In the case of our own unit, the daily personal interaction of research and clinical staff, the sharing of tasks of observation and the assumption by the research team of some responsibility for patient treatment seem to have minimized the problem of witting and unwitting sabotage of research efforts by clinical personnel. This contrasts with the consequences of introducing special research projects onto an established and structured ward by outside research personnel, thus disturbing accustomed routine.

The effective utilization of the above described facilities, milieu and personnel is dependent upon such matters as methods of evaluation, selection of experimental population and experimental design. We propose to discuss these in the light of our own experience and efforts.

METHODS OF EVALUATION

A variety of evaluation techniques and measures have been tried. Our present battery includes the following:

1. Laboratory tests.
2. Routine physiological measurements.
3. A physical sign and symptom checklist of 50-odd items. This is supplemented by additional information from daily rounds.
4. A ward observation-behavior rating scale which measures 4 degrees of deviation from the presumed norm in a number of items. The items are grouped into categories and subcategories of behavior on a scale from noninterpersonal appearance and behavior to interpersonal and intragroup behavior.
5. A quantitative mental status form used

in the context of an unstructured clinical psychiatric interview.

6. A 4-point scale of overall improvement.

In the construction of these tests, special effort has been made to define, standardize and group terms so that their meanings are discrete, consensually valid among our own group and are part of the working vocabulary of most psychiatrists. We suggest that often too little attention is paid to this obvious matter.

In addition to the above measures, one standard rating scale which has been subjected to extensive reliability testing is utilized. We currently employ the Lorr Scale. Finally, scales and checklists are supplemented by the clinical notes of all observers.

FUNCTIONS OF INVESTIGATIVE TEAM

The team functions are divided in the following way. One senior research psychiatrist serves as pharmacotherapist. He assumes responsibility for all matters of patient management relative to the therapeutic trial. Both he and the research nurse on independent daily rounds make ratings and clinical notes. The full-time status of the research nurse allows her to collect and record all data and to oversee the management of all patients as prescribed by the physician. Her notes and ratings are supplemented by those she routinely collects from ward nurses, attendants, occupational and recreational therapists. She spends up to 4 or 5 hours a day in direct personal contact with patients as they go about their daily activities and with the clinical staff.

The resident physician in charge of each patient is also responsible for independent evaluations which are subsequently discussed with him in preceptoring sessions.

It is possible to combat bias by applying the double-blind technique to the weekly evaluations of the second senior research psychiatrist.

In the assignment of functions, additional control is introduced through the provision that all categories of data be evaluated independently by at least 2 members of the investigative team.

SELECTION OF EXPERIMENTAL POPULATION

All patients who are selected by the clinical staff for drug therapies are available for our studies.

A. Subjects for Initial Trial

Approximately 5 patients are selected for the unhurried and individualized exploration of specific drug actions over the lower limits of therapeutic dosage range, using oral medication. Special criteria of selection for these subjects include: age between 21 and 45 years, a minimum of 2 to 3 months residence on the service, previous participation in a drug study, chronic illness (over 3 years) with failure to achieve social remission, cooperativeness and ability to report subjective symptoms.

B. Subjects for Therapeutic Evaluation

When some idea of relationship between dosage range and effects has been obtained, 25 to 30 additional subjects are used for therapeutic trial.

Approximately 2/3 of this group are selected on the basis of a duration of present episode of illness (not necessarily total duration of illness) of not over 1 year. Although similarity of diagnosis according to official APA nomenclature does not insure homogeneity in terms of drug influenceable variables, this portion of the test group is selected from one major diagnostic category chosen for likely responsiveness to the agent under test. It has been felt that this procedure does facilitate the simultaneous comparative observation of patients.

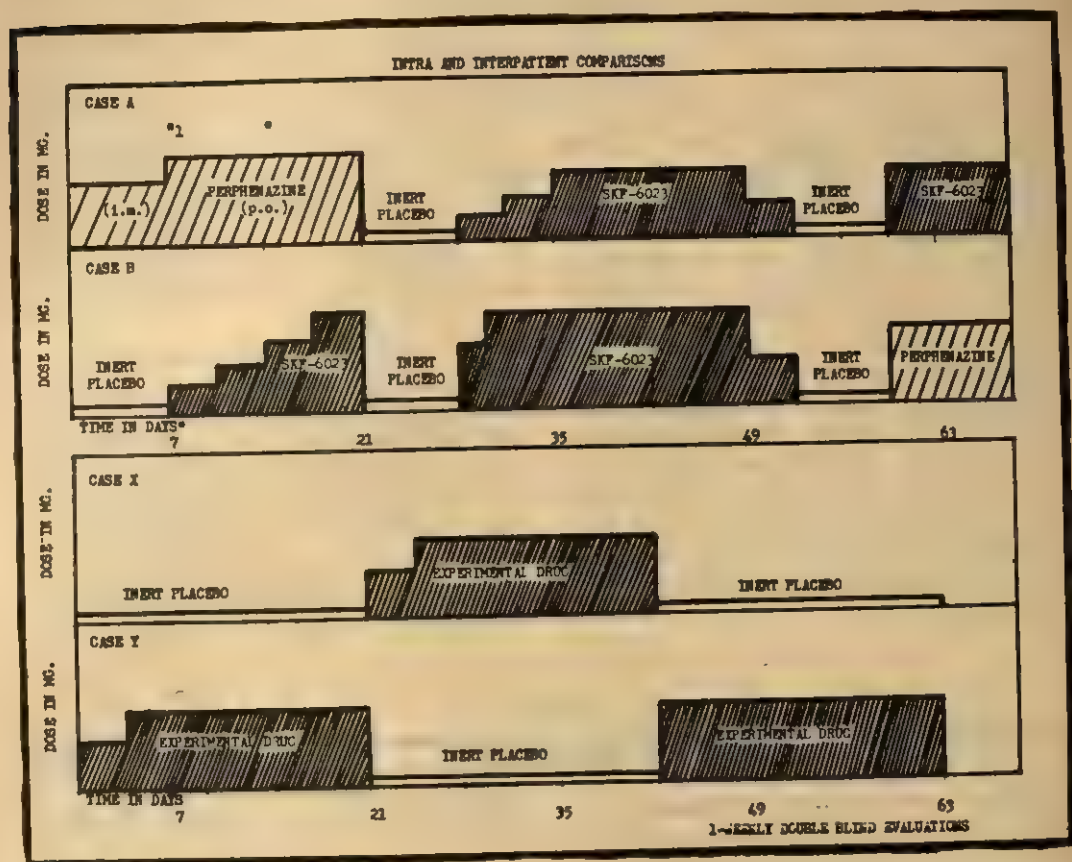
An additional 1/4 to 1/3 of the therapeutic trial group is selected on the basis of common characteristics (target symptoms) such as disorientation, or hyperactivity, upon which the influence of the drug seems to be of special interest.

EXPERIMENTAL DESIGN

Our experience has convinced us of the advisability of studying all experimental drugs against an active standard referent agent and against inert placebo. Care in the selection of this active drug is important. A number of criteria for its selection have been found helpful.

In the preliminary evaluation of an experimental drug against inert placebo and

FIG. 1



standard referent agent it is possible to utilize both inpatient and outpatient "and between patient" comparisons in order to enhance the objectivity and scope of data.

Figure 1 gives medication schedules of 4 cases simultaneously under observation. It illustrates some of the comparisons that can be made. Among others these include in the same patient:

1. Comparison of response patterns to experimental drug following initial and subsequent inert placebo intervals.
2. Comparison of short trials on experimental drug with those on standard referent agent.
3. Comparison of experimental drug effects over a range of doses.
4. Comparison of double-blind observations made at weekly intervals.

Certain simultaneous interpatient comparisons are also possible through the appropriate manipulation of dosage schedule

and of drug conditions. Examples are comparisons of:

1. The effects of standard referent agent in one case against effects of experimental drug in another case.
2. The responses to therapeutic doses of experimental drug in different cases.
3. The effects of equivalent body weight doses of experimental drug.

It is obvious that in this type of experiment only relatively acute effects can be observed and that such short inert placebo trials limit the conclusions which can be drawn from the data, especially using subjects with illness of short duration under the influence of an intensive treatment-oriented milieu. Quantitative comparisons can only be rough estimates for other reasons too.

As experience and number of cases in a particular series accumulate, it is frequently possible to improve the quantification of

observed drug effects through changing from a flexible to a rigid dose schedule and to a formal crossover design (Figure 1).

HANDLING OF DATA

In the authors' experience, one of the major problems in this type of work, generally of less concern to those in other clinical research activities, is the systematic handling of data during the course of an experiment. The strategy of conducting a study so as to uncover, exploit and check on promising leads, and a continual need for close inspection of data to insure safety and efficiency, require that a number of types of accumulated individual patient data be readily available from day to day. Also, one is frequently called upon to provide information to a sponsoring drug firm or must share information (such as dosage range explored and side effects) with other investigators.

Although each worker will have his own preferences and ideas as to how to cope with the problem of maintaining up to date summary data at his fingertips, a reproduction of an individual patient record used by the authors appears in Figure 2. This is presented more to underscore the above points than to make recommendations about "how to do it." This illustrates the graphic method which we have finally settled upon for maintaining case data in a form which permits the rapid establishment of significant relationships.

With this method of representation of data, certain psychiatric changes and physiological signs and symptoms can be correlated with each other and each with drug dose-time parameters. Of course, the major problem in using such a system is familiarizing oneself with the lengthy code in which each letter and number refers to a particular item of one of the rating scales or checklists.

FIG. 2

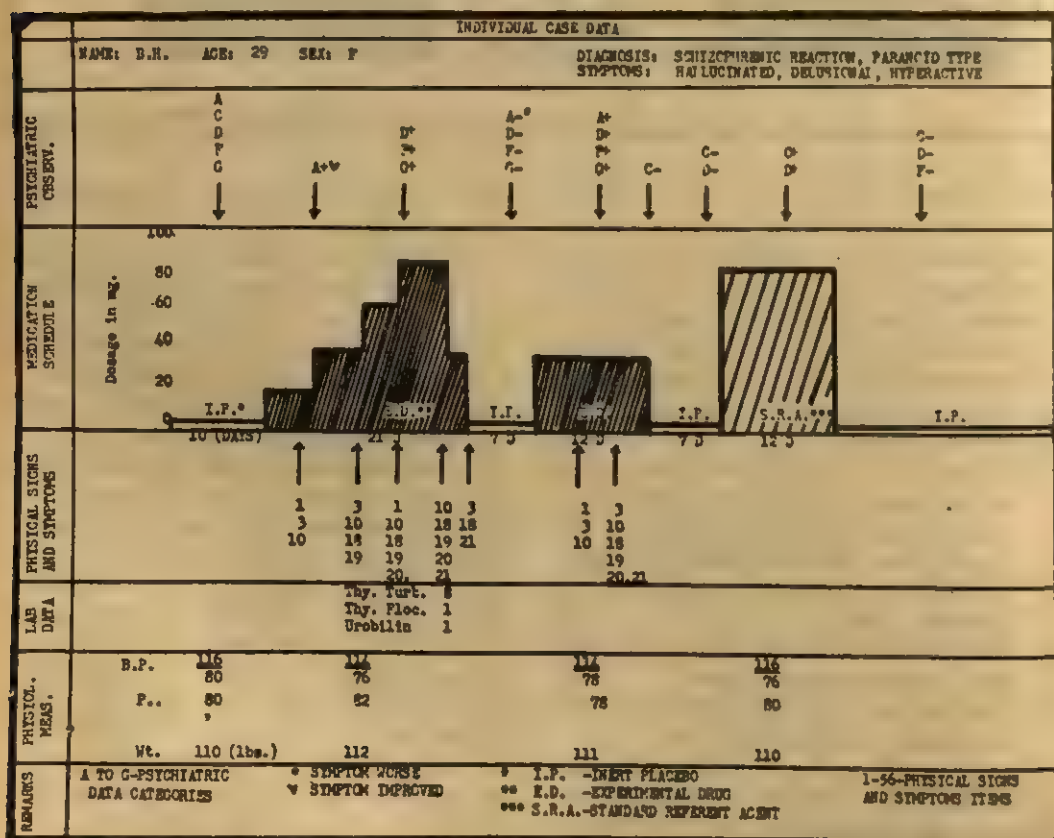


FIGURE 3

Individual Case Summary Report

DRUG : SKF-6023

NO.	DIAGNOSIS	AGE	SEX	WEIGHT (Lbs.)	DURATION PRESENT EPISODE	DURATION ILLNESS	CLINICAL SYMPTOMS					
1	Schizophrenic reaction, Paranoid type	29	F	110	5 months	5 months	Hallucinated, delusional (paranoid), hyperactive, hostile-inappropriate, uncooperative					

NO.	DOSAGE RANGE MINIMUM MAXIMUM (mg. per day)		TOTAL DOSE (mg.)	TOTAL DAYS	CONTROLS (CONDITION AND TIME-DAYS)					
1	10	80	1,400	33	IP 10	ED 21	IP 7	ED 12	IP 7	SRA 12

NO.	PHYSICAL SIGNS AND SYMPTOMS	LABORATORY FINDINGS	WEIGHT CHANGE (2 or more lbs/wk)	BLOOD PRESSURE CHANGES (max. drop on drug-over 10 mm. Hg systolic)	
1	Drowsiness, tenseness, parkinsonism, dystonia	Thy. Turb. 8 Thy. Floc. 1 Urobilin 1	0	SYSTOLIC	DIASTOLIC
					none

NO.	WARD OBSERVATION	BEHAVIOR	MENTAL STATUS	LORR SCALE	CLINICAL RESULTS	REMARKS
	Gen. Appear. Behavior	Interpersonal Behavior	Intragroup Behavior			
1	1	2	3	2	50-18	2

REPORTING OF DATA

Figure 3 is presented to emphasize the importance which we see in making available detailed individual summary data for drug firm or clinical investigators, since others may want to seek clues as to a possible significant relationship.

The reporting of overall as opposed to individual summary data in preliminary psychiatric drug testing is the subject of another paper in preparation and will not be considered here.

GENERAL COMMENTS

The authors are mindful of the fact that there are numerous limitations inherent in the general approach to preliminary drug screening which they have presented. For example, long range therapeutic and toxic effects cannot be assessed. An experimental sample of 30 to 35 patients is not large enough to guarantee detection of all acute therapeutic or side effects. The fact that a large percentage of acutely ill patients improve irrespective of whether or not a drug is employed, especially on an active treatment unit, is not entirely compensated for

by careful attention to problems of methodology.

It might be suggested that for this type of preliminary study the authors go too far in attempting to apply quantitation to their observations. Whether or not this is the case, it does serve to encourage care and specificity of observation.

Finally, in our own case, the type of program described is part of a larger research effort. This leads us to comment that the type of preliminary screening activity described in this paper can be incorporated into an investigative program in such a way that it contributes to other types of clinical research.

SUMMARY

1. The methodology of the initial patient screening of psychopharmacological agents is a relatively neglected but important area for discussion and improvement.
2. The main functions of this activity are to uncover safely and efficiently a wide variety of leads about desirable and undesirable pharmacological and psy-

chiatric actions. This requires balance and compromise between the practice of the clinical art of pharmacotherapy and the use of procedures of good scientific control.

3. There are advantages in conducting such investigations on a research and teaching-oriented, active and eclectic treatment, inpatient service, using small numbers of acutely ill psychotic patients under intensive observation for periods up to 2 to 3 months. Subtle drug effects can be seen, and such a milieu calls forth a wide range of adjustmental behavior for study.
4. Multiple observers of different professional backgrounds and training, using a variety of rating scales and checklists to evaluate independently the same phenomena, enhance objectivity, diminish bias and help to circumvent individual blind spots.
5. There are special problems of selection of subjects since one is interested in observing the effects of drugs upon a large spectrum of psychopathological factors while insuring safety.
6. In the experimental design the testing of a new drug against a carefully selected active referent agent and inert placebo, and the use of inpatient and outpatient comparisons are feasible and to be recommended. Although starting with flexible adjustment of dose, a rigid dosage schedule and true crossover design can be employed to advantage safely in the later stages of many studies.
7. Along with the collection of data by open experiment, provision can be made for employing double-blind technique.
8. There is a special need in preliminary drug testing for systematic handling of individual case data during each investigation in order to uncover and exploit leads, insure safety and to allow for the report of certain kinds of summary data to drug firms and to other investigators.
9. The detailed post-experiment report of individual case data allows others to seek significant correlations other than those of interest to the investigator himself.
10. This particular kind of research can be effectively incorporated into a larger research program.

PSYCHIATRIC FACTORS IN MEDICAL STUDENTS IN DIFFICULTY: A FOLLOW-UP STUDY¹

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THORNTON WOODWARD ZEIGLER, Ph.D.³

For years there has been increasing interest in the methods which can be used in the selection of persons for various types of activity: the military service, industry, and professions. In some medical faculties, there has been a desire to develop more knowledge about the relationship of student personality adjustment and medical school success. Of particular interest are the intellectual and personality characteristics of an individual who could and should become a qualified physician. For over 20 years psychiatrists and psychologists from the Department of Psychiatry of the University of Michigan Medical School have carried out a program of systematic evaluation of medical students who present problems as a result of either scholastic or social difficulty. Also evaluated are those applicants whose credentials or regularly scheduled interviews raise questions regarding admission. An earlier paper presented in 1946 described the program being carried out at that time and some of the problems (1). The present paper is a description of the development of this program with a follow-up on students referred during the 3 years 1943-1945.

Early in the program the number of students referred for evaluation was relatively small. Most of the students were examined by the authors. Under such circumstances, it was possible to establish a uniform method of evaluation and for the psychologist and psychiatrist to discuss each student before making a final report to the Medical School administration. Students were referred for various reasons, such as scholastic difficulty, social and family prob-

lems, and even for a brief therapeutic session concerning his reaction to being requested to withdraw from school.

The most frequent reason for referral has been an unsatisfactory scholastic record or unacceptable behavior. Occasionally the student has come to the psychiatrist himself, or has asked for such referral. As the administrative staff of the Medical School and the members of the Promotion Board began to develop more confidence in the techniques being utilized, there was a progressive increase in the number of students referred for evaluation. This increasing load required more than the original psychiatrist and psychologist. Inevitably this led to variations in the reports. For example, a few of the psychiatrists felt that it was unwise or unnecessary to utilize psychological studies and for a time many of the students who were referred for psychiatric evaluation had no psychological study. Even after a definite policy had been established in which all referred students were to have a psychological study, the psychiatric reports varied somewhat in accordance with the psychiatrists making them. These variables have made it difficult to develop a valid report.

Certain philosophical questions present themselves for consideration. For example, in our material are a number of medical students who were doing satisfactory work from an academic point of view but who had made a poor adjustment with their associates or had presented serious social problems. Psychological and psychiatric evaluations proved some of them to be seriously schizoid or even schizophrenic. Since such a student may do satisfactory academic work, we are faced with the dilemma of the propriety of allowing such a student to graduate. The Medical School would seem to have an ethical responsibility in this matter. On the other hand, there are well-adjusted students whose intellectual ability, reading ability, or capacity for

¹ Read at the 116th annual meeting of The American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

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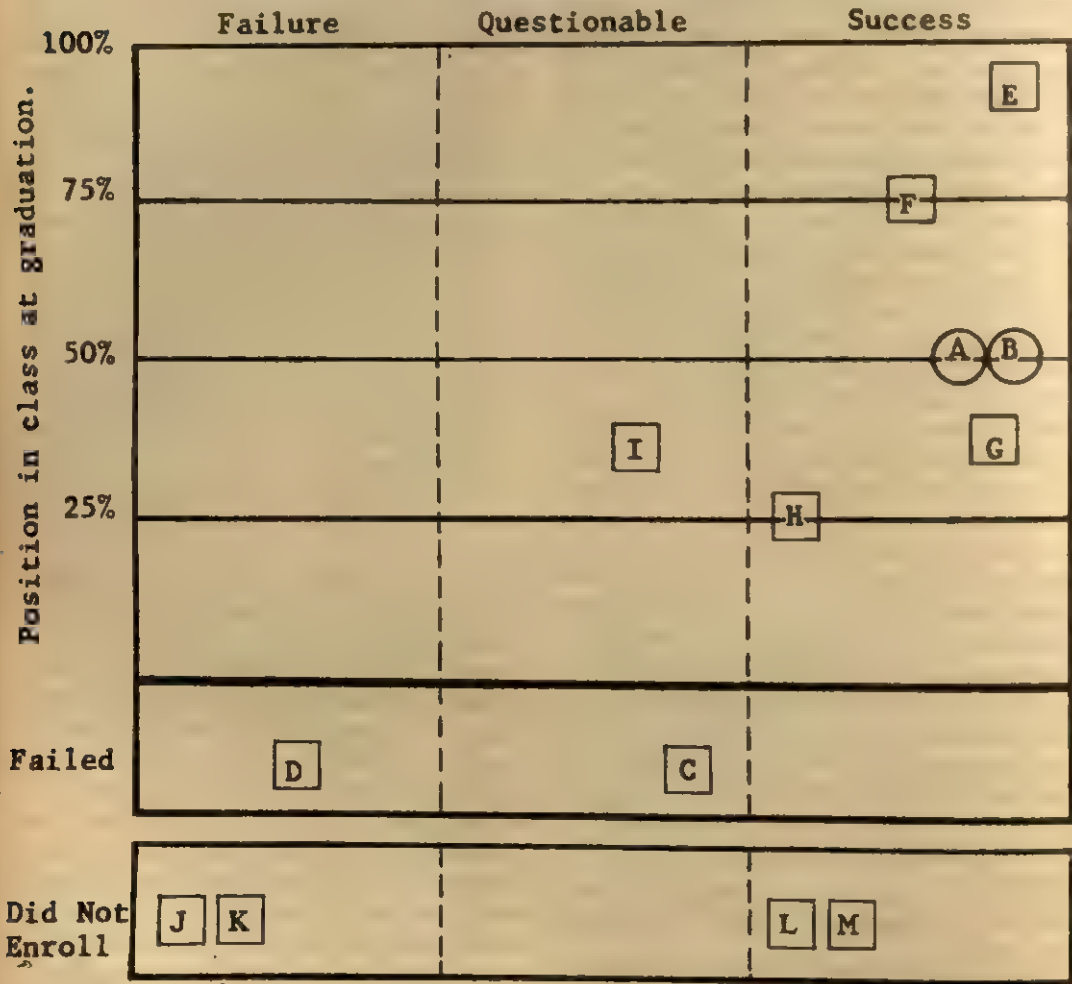
³ Assistant Professor of Psychiatry, The University of Michigan Medical School, and Chief Psychologist of the Neuropsychiatric Institute.

concentration is such that they do marginal or unacceptable academic work. The question is immediately raised as to whether these students should be given sufficient assistance to do acceptable academic work, or whether they should be dropped because of failure to meet basic scholastic requirements.

In order to make an evaluation of our recommendations to the Medical School, we have reviewed the records of those students or applicants who were seen over

the 3-year period noted above. Figure 1 shows our experience with 13 applicants. Two whose admission was recommended went elsewhere; one of these is now an assistant professor of psychiatry. One applicant, who was considered of high intellectual capability but who appeared to be somewhat immature and emotionally inflexible, and in whom there was a question of adequate motivation for the study of medicine, was recommended for acceptance with hesitation but was later dropped be-

FIGURE 1
MEDICAL SCHOOL PROGRESS OF 13 APPLICANTS
PREDICTION



○ Indicates the students recommended who did not enroll here but graduated elsewhere.

cause of inability to meet scholastic standards. Another student was considered immature, unstable and with a paranoid reaction. Against strong advice, he was admitted, had serious difficulty during the freshman year and was dropped because of an unsatisfactory scholastic record in his second year. Included also are 4 applicants who were referred before being accepted because of questions raised during the pre-admission interview or because of inadequate preparation or borderline scholastic records. These were all recommended for admission. Of these 4, one graduated as fifth in a class of 132 and is reported to have been an excellent intern. One graduated 23rd in a class of 92, was considered to be an unusually good intern, and an excellent resident. Two graduated in the lower third of their class but have made satisfactory records subsequent to graduation. One pre-admission student with high intelligence but with questionable vocabulary and reading ability, whose Rorschach report suggested that he was striving beyond his capacity, was given a poor prognosis, as decidedly borderline, and likely to fail. He was admitted and eventually graduated 74th in a class of 107. As an intern he did good work, was considered cooperative, pleasant and intelligent. He is now an assistant professor in a medical school and considered to be an exceptionally well-qualified physician. Of 4 other applicants of whom we recommended 2 for admission and suggested rejection of 2, there is no further record.

The 18 students who were seen because of scholastic difficulty after their admission to Medical School are shown in Figure 2. Three who had been dropped but were readmitted on our recommendation all completed Medical School with somewhat below average records. Each of these students was given advice and support and all functioned satisfactorily as interns. Fifteen students were referred for scholastic difficulty before the problem had reached the point of dismissal. Included are 5 students who were considered unlikely to be able to complete their medical school career because of personality difficulties or lack of motivation. These students were eventually dropped because of inability to do satis-

factory scholastic work. All but 2 of the remaining 10 had significant emotional problems, with which they were given some help. The other two were considered to be overly sensitive but otherwise had no significant emotional problems. All of these were kept in Medical School on our recommendation. These students were rated scholastically at the time of graduation in the lower third of the class, with the one exception, whose record was mid-class level. With one exception for whom we have no record, these graduates were reported as doing satisfactory to excellent work as interns and/or residents.

In evaluating these findings it appears that the ultimate success or failure correlates moderately well with our clinical and psychological prognosis. Such a study necessarily raises interesting philosophical conjectures. It would be of value to establish not only college credit requirements but personality and intellectual characteristics in order to qualify for the study of medicine. Craig has said that an "individual should have a desire to be of service to humanity and have scientific inquisitiveness. He should have basic intelligence, good judgment, sympathy, tolerance, honesty and humility" (2). Macnamara indicates that the virtues of a good doctor are "goodness, kindness, patience, unselfishness, humility, reliability and cheerfulness" (3).

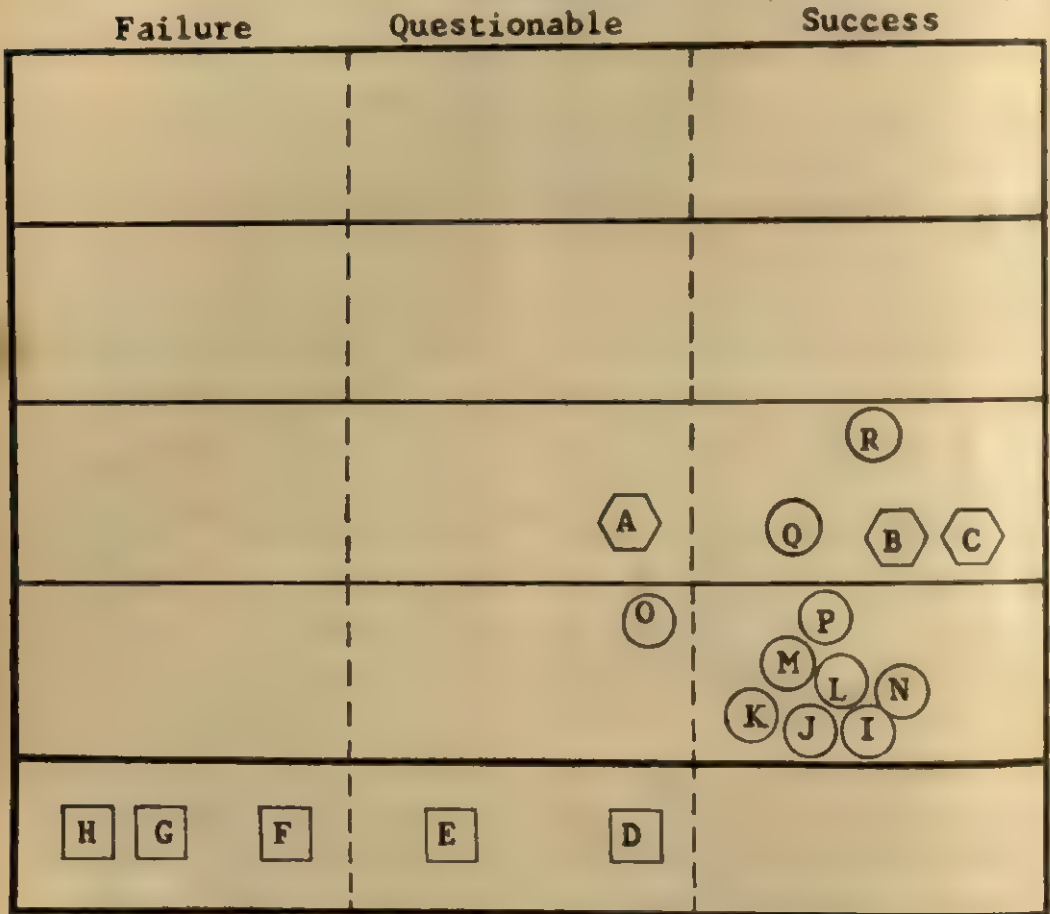
Some of the characteristics of the good physician which might be listed are honesty and sincerity, integrity, sympathy, tolerance and understanding, dedication, motivation associated with a real interest in people. It is essential to have enough self-knowledge to avoid involvement with the patient to the point of causing iatrogenic illness. Few persons would quarrel with these characteristics as qualities which should be possessed by the physician. The problem is the extent to which the Admissions Committee should insist upon the presence of these characteristics or of such factors as a high level of intelligence or of scientific inquisitiveness.




In a study of the relationship between potential predictor and criteria of performance of medical students, Dr. Lowell Kelly, Chairman of the University of Michigan Department of Psychology, and co-workers developed a number of predictor variables

and criterion measures(4). From their study it appears that there is little agreement among alternative criteria in reference to internship ratings. Interestingly enough, a variable considered under the title, "Over-All Promise," was not signifi-

cantly related to any of 200 predictor variables. There was little correlation with any medical school grades or with state or medical board exams. However, there was a surprisingly high correlation with sociometric ratings made by peers in the senior

FIGURE 2
MEDICAL SCHOOL PROGRESS OF 18 STUDENTS REFERRED BECAUSE OF
ACADEMIC DIFFICULTY
PREDICTION



-  Students with relatively mild emotional difficulties.
-  Students who had been dropped and were readmitted.
-  Students who had severe emotional difficulties or were poorly motivated.

year. It is interesting how few of the internship ratings are associated with ability scores or with indices of scholarship. Dr. Kelly, in a personal communication, states that by all odds the best predictor of internship rating are strong vocational interest scores on tests administered before admission to Medical School.

CONCLUSIONS

1. A student evaluation and assistance program of the sort referred to here functions most satisfactorily if the number of psychologists and psychiatrists are sharply limited, and if they work together as a unit with the Admissions Committee and the Promotion Board.

2. Prognostic evaluations based upon such studies appear to be relatively valid.

3. More attention should be paid to personality characteristics and to motivation in the selection of students for the study of medicine.

4. Research should be undertaken to determine those factors which correlate best with success in the field of medicine. An example of such research is that which has been done by Dr. Lowell Kelly and his associates. This type of investigation should be continued and amplified.

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EVALUATION OF EMOTIONAL DISTURBANCE IN 403 ISRAELI KIBBUTZ CHILDREN¹

MORDECAI KAFFMAN, M.D.²

For a little more than 40 years, the Israel communal settlement called Kibbutz (plural, Kibbutzim) has carried out a very unique program in child-rearing. In these settlements, partly for objective and partly for ideological reasons, children are brought up from birth in separate children's homes. They are reared by trained nurses in groups of 6 children of equal ages which are merged into larger groups numbering 12 to 18 when they reach the age of 4. This group of age-mates remains rather constant in size and composition throughout the years from kindergarten through high school.

During the first half-year of life, although the infant lives in the children's house, the mother-child relationship very much resembles that of the traditional family. The baby experiences the mother in terms of daily routine as a source of gratification and safety. The usual maternal functions such as feeding, cleaning, handling and fondling are mainly performed by the mother. Most of the infants are breast-fed unless there is a clear-cut medical contraindication. The nurse, during this period, takes care of the management of the infant's house and gives guidance to the mothers. Later on the nurse gradually takes over the care of the child and at the end of its first year she is wholly responsible for it. Usually by this time the process of weaning has been completed. During the first half of his second year the child leaves the infants' house to go with his group to the toddlers' house which is designed to hold a maximum of 6 children. A new nurse and aide take care of him during the day-time. The nurse is not only concerned with the physical care, emotional needs, and well-being of the children in her charge, but has also a decisive role in discipline and social areas. She trains the children in self-feeding, toilet habits, independ-

ence, and group interaction. Therefore, the nurse assumes functions and duties usually performed by the parent in Western society.

As already mentioned, during the first half year of life and gradually less in the second half, the child is in close contact with his mother. From the second year he is with his parents in their room daily in the two or three hour interval between the parents' return from work and the child's bedtime. On rest days the child spends almost the whole day with his parents. The time that children and parents are together is absolutely child-oriented. The nature of parent-child interaction depends naturally upon the ages of the children. These hours are generally used as the child wishes: playing, reading, taking a walk. Both the father and the mother are equally active in sharing their time with the children.

The question whether the Kibbutz system of education may be considered as a variety of "maternal deprivation" has been raised by Bowlby(1) and Caplan(2), as well as in the special workshop devoted to this problem at the 1957 annual meeting of the American Orthopsychiatric Association(3). Unfortunately very little reliable data had been collected to corroborate "clinical impressions" about how much the Kibbutz child fits or deviates from the so called normal standard. Among difficulties to be overcome we may mention the choice of variables to be investigated; the criteria to be adopted in quantifying human behavior; and the way of obtaining information from the child's environment. Moreover, since very few attempts have been made to study the behavior of unselected groups of "normal" children, it is rather difficult to compare symptoms and behavior of Kibbutz children in relation to "normal controls." As David Rapaport(3) put it:

We can not be sure whether our own upbringing, which is hidden by privacy and restraining conditions, has or does not have the same kind and amount of "behavior problems" which become manifest in collective upbringing which lacks such hidden factors.

¹ Read at the 116th annual meeting of the American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

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SAMPLE AND METHOD

This study was carried out in cooperation with the Education Department of Kibbutz Artzi.³ Its purpose was to explore the frequency and intensity of a wide range of behavior problems within the total population of children of three Kibbutzim. The settlements selected for this study may be considered as a cross section sample of the Kibbutz Artzi movement.⁴ The group investigated included all the children of these settlements up to the age of 12, totalling 403 children who have been followed on a systematic recording basis from the first few days of life.

The present report is limited to the analysis of the prevailing behavior problems in the sample of children investigated for a period of 12 months (throughout the year 1956). The data recorded include: 1. Developmental information gathered from the nurses' records; 2. Structured interview of the nurses and teachers on each child; 3. Interviews with the parents for additional information and tentative appraisal of the child-parent relationship; 4. Repeated psychiatric observation of the child in regular life situations, namely, interaction, with his group-mates, mealtime, child-parent meeting and bedtime.

An attempt was made to give precise definition to every one of the items under investigation in order to compare at each age level the extent of behavior deviation of the Kibbutz child in relation to a hypothetical "normal model." Although there was a theoretical recognition of the variability, lack of agreed standards, and difficulty of differentiating normal from abnormal behavior, the findings showed a reliable and positive correlation among the separate sources of information used in this research. A fair positive agreement to differentiate normal from abnormal behavior in a given child was found in the separate evaluations of the psychiatrist, nurse, teacher, and par-

ent. In the rather few cases of lack of agreement, a special coordination conference was held to deal with the reason of the different appraisals. The data were integrated by the author, who knew each one of the children and parents for a period of from 1 to 10 years—an average of 6 years.

A single 4 points scale for the scoring of behavioral items was used to include normal behavior, and slight, moderate, or marked deviations from the norm. The items selected for evaluation were mainly chosen with two goals in view: first, easy detection of the behavior item by direct observation performed by trained and untrained people involved in the research. Second, an attempt was made to pick out behavior characteristics which might uncover specific problems of the Kibbutz system of upbringing.

There were 217 boys and 186 girls; 219 were under the age of 6; 184 children 6 to 12 years old were attending primary school.

Table 1 shows the general findings in the total group of 403 children, while Table 2 presents the percentage of the prevalent behavior problems at different age levels.

From the data reported hitherto on behavior characteristics of large unselected groups of children (4, 5) it appears that the incidence of behavior problems among the Kibbutz children fits into the "normal range of deviation." The analysis of the data shows no evidence of unusual percentage of behavior problems attributable to lack of mothering, although some specific differences were found between Kibbutz children and family-raised children. It seems worthwhile to comment briefly on some of these findings and differences. A more detailed report on each item of behavior investigated will be published in separate papers.

RESULTS

Among the behavior characteristics and problems investigated, the highest peak of incidence was found in relation to thumb-sucking. The frequency of the symptom for the age-range of 1.6 to 12 was as high as 28% among 383 children surveyed. In most of the cases the thumbsucking was of mild or moderate intensity; in 5% the symptom was considered of marked severity. The frequency of this particular symptom increases at the age of 2, to reach its maxi-

³ I wish to express my deep gratitude to Shmuel Golan, Director of the Education Department, for his steady encouragement and helpful advice, as well as for providing the required facilities to implement this research. Limitations of space do not allow me to include the long list of nurses, teachers and educators of the children who cooperated so actively in this study.

⁴ Kibbutz Artzi constitutes one of the three largest federations of Kibbutzim in Israel.

TABLE 1
THE PREVALENCE OF SOME BEHAVIOR PROBLEMS IN A REPRESENTATIVE SAMPLE OF
403 KIBBUTZ CHILDREN UNDER THE AGE OF 12

Problems	Number of children surveyed	Age	Percentage of problem incidence	Percentage of marked deviation
Thumbsucking	383	1.6-12	28	5
Temper tantrums	383	1.6-12	12	1.5
Enuresis	283	3.6-12	11	—
Masturbation	350	1.6-11	9	.3
Aggression	383	1.6-12	8	2
Eating problems	403	0.1-12	7	.2
Nailbiting	383	1.6-12	7	0
Learning problems	184	6-12	7	0
Rhythmic Motor Habits	403	0.1-12	5	.5
Breath-holding Spells	199	1.6-6	3	.0
Night fears	383	1.6-12	2	1
Stuttering	343	2-12.6	2	0
Tics	306	3-12	1.6	0

TABLE 2
PERCENTAGE OF PROBLEM INCIDENCE AT SUCCESSIVE AGES
(SLIGHT TO MARKED DEGREE OF DEVIATION FROM NORMAL)
AGE IN YEARS—PERCENT OF PROBLEM INCIDENCE

Problem	Up to 2	2-3	3-4	4-5	5-6	6-7	7-9	9-11	11-12
Thumbsucking	—	24	55	45	30	54	34	12	0
Temper Tantrum	27	32	5	20	7	23	7	6	3
Enuresis	—	—	31	31	12.5	12	9	4.6	3
Masturbation	1	3	3	12	12	15	13	6	—
Aggression	5	16	8	12	10	15	7	2	6
Eating Problems	5	8	5	10	10	6	6	6	0
Nailbiting	0	0	0	2	10	18	13	12	6

num between the ages of 3 to 9, at a constant level. In this age-range 41% of the Kibbutz children were thumbsuckers. The figures given by McFarlane, *et al.*(4), as well as Lapouse and Monk(5) for corresponding samples of American children disclose a strikingly lower frequency of thumbsucking, ranging from two to 3 times less than the incidence reported for Kibbutz children. Among Kibbutz children thumbsucking declined rapidly only after the age of 9. No significant difference was found in the incidence of the symptom between boys and girls.

A comparative study was performed among 108 thumbsuckers age 1.6 to 11 and 225 Kibbutz children of the same age who did not present this symptom. No significant differences were found between the two groups as to the frequency and intensity of

additional behavior problems. In 26% of the thumbsuckers the symptom was a single one without further significant deviations in the behavior pattern. Where other behavior problems were present the comparison between the group of thumbsuckers and the control group did not reveal any differences of statistical significance.

It seems, therefore, that in a great percentage of Kibbutz children thumbsucking does not represent a consequence of emotional disturbance with increased dependency needs leading to regression to the security of the oral stage. The author assumes that there are at least two reasons to explain the remarkable incidence of thumbsucking in Kibbutz children. First of all, one has to take into account the brief nursing period. The weaning process is begun about the age of 3 months to be

carried on gradually for 6-8 months so that at the end of the first year of life the average baby in the Kibbutz is already weaned and starts feeding himself with a cup or a spoon. The short period of sucking experience may perhaps explain partly the increased incidence of the thumbsucking until a peak is reached at the age of 3. Actually, against this hypothesis stands the fact that there is not a higher frequency of thumbsucking at the age of 2 to 3 (24%) than that found in the United States among children who had a much more prolonged nursing period. McFarlane, *et al.* (4) found 27% of thumbsucking in children aged 1.9 to 3 years old. However, there is a striking difference from the ages 3 to 9, in which the thumbsucking persists and even increases, unlike control groups in which the frequency of the symptom decreases gradually. A possible explanation seems to be in the different approach to the child's symptom in the Kibbutz in relation to the usual family setting. On the whole, thumbsucking is seen by Kibbutz educators as a normal expression of oral gratification needs. Nurses, teachers and parents usually assume a permissive attitude toward the symptom, so that the children at any age may suck their fingers without any external interference. Thumb-sucking is simply ignored by the adults, who refrain from using any kind of device to stop it.

In sharp contrast to this high incidence of thumbsucking, a low incidence of eating problems was found in Kibbutz children. Out of 403 children, there were only 29 (7%) with feeding disturbances which included poor appetite and finickiness. Only in .2% of the children was the symptom severe. This figure is far below the usual frequency of eating problems in the family setting at every age level. Lapouse and Monk (5) found in a representative sample of 482 children aged 6 to 12, 20% with reported poor appetite, while at the same age level the symptom was present in only 4% of the Kibbutz children.

Other symptomatic manifestations in the oral area went along with the above findings and failed to reveal evidences of oral deprivation. The incidence of drooling and psychogenic vomiting was negligible. Nail-biting was extremely rare in Kibbutz chil-

dren under the age of 5, while among children from the age of 5 to 12, the frequency was 12%. This figure is about two to three times below the frequency found by McFarlane, *et al.* for children of the United States (4).

Speech problems were also infrequent among Kibbutz children. Out of 343 children between the ages of 2 to 12, seven children (2%), stuttered. Except for one child, whose stuttering was of a moderate degree, the rest of the group had a rather slight disturbance, and it could be assumed that it would disappear without any special treatment.

Autoerotic manifestations like masturbation and rhythmic motor habits (head rolling, self-rocking, *etc.*) did appear apparently in a similar frequency to the usual estimate for an unselective sample of children. In the Kibbutz setting these are symptoms that may be easily detected. The same rule of non-interference on the part of the educator that was pointed out in the case of the thumbsucking, applies to masturbatory activities. The educator shows a permissive non-punitive attitude and the child masturbatory activity is ignored. For the purpose of this research all play or self-occupation with the sexual organ which was repeated deliberately as a pleasure seeking device was noted as masturbation. The total incidence of masturbation among 383 children at the age-range of 1.6 to 11 was 9%. This figure is somewhat higher than that found by McFarlane (4) for 116 children of the same age (about 5%). It may be assumed that the difference is partly due to difficulties to get accurate data on this matter from the private family. However, it is also possible that the difference is partly related to the parental restraining attitude and disapproval in the private family leading to repression of the autoerotic activity.

Comparison between 122 children at the oedipal age (3 to 6 years old) and 151 older children in the so-called latency period (6 to 11 years old) did not disclose any significant difference in the frequency of masturbation. Both groups showed a similar figure: 10% of masturbation for the "oedipal group" and 11% for the group in the "latency period." As to sex, a significant

prevalence of masturbation among boys was observed in relation to girls, the ratio being $2\frac{1}{2}$ to 1.

The problem of enuresis and encopresis was thoroughly investigated in 283 children between the ages of 3.6 to 12, and it will be dealt in detail in a separate paper. The incidence of enuresis among 283 children was 11% comparable to a representative sample of "normal" children. Yet, comparative evaluation is difficult to establish either because most of the figures on enuresis refer to selected samples of deviant children, or because the figures reported lack accuracy. In most of the papers published hitherto, the prevalence of enuresis has been determined by data collected during occasional home visits in absence of a close followup.

A definite difference in distribution of enuresis by sex was noticed: 73% who wetted were boys and only 27% were girls.

Every enuretic child was studied separately in relation to the presence of other behavior disorders, antecedents of enuresis among siblings and parents, characteristics of child-parent relationship and possible clustering of different types of enuretic children. These findings will be reported elsewhere.

Encopresis was a rare finding among 283 Kibbutz children between the ages of 3.6 to 12. Only two children (.7%) presented soiling of mild intensity, one of them accompanied by enuresis.

Another symptom studied was the presence of repeated night fears. It came as a surprise to us that only two children (1%) presented night fears. Nine additional children were reported as having shown this disturbance in the past two years, an incidence of 3% in 383 Kibbutz children aged 1.6 to 12. This incidence seems to be rather low in comparison with usual figures on night fears frequency. This is particularly striking since the children are alone for most of the night, far away from their parents' houses, while one night watch goes from house to house to check on all the children. Since each round of the night watch requires approximately one hour, maybe additional instances of mild night fears could not be detected and reported.

Several observers have reported a rather

high incidence of excessive aggression among Kibbutz children in the toddler and nursery age. Caplan's (2) impression was that Kibbutz preschool children . . . "show an uncontrolled aggression which exceeds by far that which is found among children in normal family circumstances." No objective data were given to confirm this assumption. Moreover, again we do not have reliable comparative data obtained in other types of upbringing.

A careful observation of a group of 383 children ranging in age from 1.6 to 12 was made with regard to the presence of acts of aggression in which a child appears to be repeatedly motivated to hurt or harm another. Acts of aggression were considered those instances in which force was used to take objects or toys from other children, or the play of other children was disturbed by pushing, hitting, biting, destructiveness, etc. Children who showed cruelty to animals or people were also included in this category.

It appears that 33 out of 383 children observed (8%) showed different degrees of repeated aggressive behavior. In the great majority of these aggressive children the extent of deviation was considered slight or moderate. Only in 6 children (1.5%) was the deviational aggressive behavior qualified as severe.

As has been reported by other observers, a noticeable sex difference was noted with regard to aggression. Aggressive behavior was 4 times more frequent among boys than among girls (27 to 6).

Likewise, there were differences in the incidence of aggression according to the age-range. Out of the 199 children in the preschool age, 21 children (10%) were classified as aggressive. On the other hand, among 184 children between the ages of 6 to 12 there were only 12 (6%) aggressive ones. This difference probably applies to any kind of upbringing and reflects the effect of socialization in the gradual formation of inner controls. Apparently, the above figures on aggression among Kibbutz children do not substantiate the impression of an unusual, excessive frequency for this symptom. Hyper-aggression in 32 out of 33 children occurred in relation to several other problems which appear with sig-

nificant higher frequency in these children in comparison to the total group. Aggression, temper tantrums, fears, enuresis and nailbiting constituted a definite interrelated cluster of symptoms. While temper tantrums appeared 4 times more frequently among aggressive children than in the total group, fears, enuresis and nailbiting were present two to three times more often in the hyper-aggressive sample of children.

As regards the frequency of temper tantrums, once again we should face the difficulties of establishing the delimitation between normal and abnormal reaction. The symptom was considered and quantified when the child's rage outbursts exceeded in intensity and frequency those of a theoretical "normal model" for the specific age. Each child who reacted with temper tantrum in a repetitive way in response to frustration (at least once-a-day as an average) or had less frequent but unusually intense outbursts, was classified in a separate group. Using this criterion 49 (12%) out of 383 Kibbutz children were included in the group of children with deviant temper tantrums. In 5 children (1.3%) the temper tantrum was severe enough to be considered a major symptom. Temper tantrums declined from the age of 7 onward. Among 232 children under 7, repetitive temper tantrums were found in 40 (17%). On the other hand, the symptom was present in only 9 (6%) out of 151 children in the age range of 7 to 12. Lapouse and Monk(5) who tried to quantify the intensity and frequency of temper tantrum in a representative sample of 482 children aged 6 to 12 found a percentage of 11% in which the outbursts appeared once a day or more. Among 184 Kibbutz children of the same age the percentage of temper tantrum of similar frequency was 9%.

A striking similar percentage of temper tantrums incidence was obtained among boys and girls in the group of 49 Kibbutz children with this symptom.

Breath-holding spells as a result of anger or frustration were reported in a very low percentage of the children. They were observed in 6 children from the ages 1.6 to 3, an incidence of 2.7% among the preschool children.

SUMMARY

The Kibbutz has produced a method of upbringing planned to fit its interests, needs and goals. The most significant differences between the Kibbutz system of education and the traditional Western family can be set down under three headings: the transfer of several parental functions to other adult figures; the importance of the peer group for the Kibbutz children; and the similarity of roles assumed by father and mother in the child-parent relationship.

The child is raised in a rather stable peer group whose importance for the child steadily increases from the second year of life on. The process of socialization is mainly achieved through this very early and constant group interaction, with the nurse assuming the role of socializer.

The father in the Kibbutz usually spends more time with his children than in the traditional Western family. Beginning with the second year of life the father is with his children for the same period of time as the mother using this time in most of the cases to be a playmate. The usual sex distinction between the role of provider and caretaker does not exist in the Kibbutz. Despite these striking qualitative differences in their upbringing, the Kibbutz children seem to fit into the normal range of behavior pattern.

A study was designed to explore the frequency and intensity of a wide range of behavior problems within the total population of 403 children aged 1 to 12 years in three different Kibbutzim. No evidence was found of unusual percentage of behavior problems attributable to emotional deprivation. With regard to frequency and intensity of most of the symptoms the findings seem either to match the usual figures in "normal controls" or even appeared less prominently. This was observed in relation to symptoms like aggression, temper tantrum, breath-holding attacks, enuresis, rhythmic motor habits, speech problems, nailbiting, and night fears. A very peculiar difference is the inverted ratio between thumbsucking and eating problems. Kibbutz children at different age levels had 3 times more thumbsucking and about 3 times less eating problems than "normal control groups." No significant differences were found with re-

gard to additional behavior problems between 108 thumbsuckers and 225 Kibbutz children who did not present the symptom. The apparent explanation for the high incidence of thumbsucking, in addition to the early weaning of the Kibbutz infants, seems to be the very permissive approach to the symptom. The low frequency of eating problems and psychogenic vomiting reflects most likely the fact that the feeding functions and training is in charge of the nurse instead of the mother from the end of the first year of life.

In the Kibbutz, as in the traditional family, the parents constitute the most important figure in the child's life. Deviant behavior of Kibbutz children—with exclusion of constitutional factors—is due in the great majority of cases to a disturbed child-parent relationship.

Rich opportunities for research in normal child development are provided by the Kib-

butz system of education, and as Bowlby (1) has stressed . . . "it is to be hoped these will not be missed."

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CLINICAL NOTES

(The Clinical Notes report the findings of the authors and do not necessarily represent the opinions of the Journal.)

AMITRIPTYLINE (ELAVIL), A NEW ANTIDEPRESSANT

JOSEPH A. BARSA, M.D., AND JOHN C. SAUNDERS, M.D.¹

To date, the most effective antidepressants have been the monamine oxidase inhibitors and imipramine. These drugs, however, have limitations in the treatment of depression in schizophrenic patients, for they will frequently exacerbate the symptoms of schizophrenia, causing the delusions and hallucinations either to appear for the first time or to become more florid. This untoward effect is more marked with the monamine oxidase inhibitors than with imipramine.

The purpose of the present study was to test the effectiveness of a new antidepressant, amitriptyline hydrochloride (Elavil),² in the treatment of chronic psychotic patients manifesting depression in addition to their other symptoms. Amitriptyline is not a monamine oxidase inhibitor, but is related chemically and pharmacologically to imipramine.

Twenty-eight female patients between the ages of 31 and 60 were chosen for the study. They had been continuously hospitalized from 1 to 23 years. Their diagnoses were as follows: 19 schizophrenia, 4 involutional psychosis, mixed type, 2 manic-depressive psychosis, mixed type, 1 psychosis with epidemic encephalitis, 1 psychosis due to alcohol, deterioration, 1 psychosis due to epilepsy, deterioration.

The description of the patients varied, but on the whole they were clean and neat in appearance, passively cooperative, seclusive, withdrawn, depressed rather than flat in affect, delusional and hallucinated. In 15 patients the depression was agitated, and in 13 quiet and retarded.

All had been on tranquilizing drugs for

at least a year, with slight or no improvement in their symptoms. Nineteen had also received a 1 to 3 month course of imipramine in conjunction with the tranquilizing drugs. Of the latter group, 8 patients showed slight improvement in depression with imipramine, 5 no improvement, and 6 grew worse on imipramine, becoming more tense, restless, agitated, and responding more to their delusions and hallucinations. Imipramine was discontinued prior to the present study.

At the start of the study, all of the patients were receiving various tranquilizing drugs. Five were receiving chlorpromazine, 6 a combination of chlorpromazine and trifluoperazine, 5 thioridazine, 8 levomepromazine, 1 prochlorperazine, 1 a combination of prochlorperazine and promazine, and 2 fluphenazine. The dose of the tranquilizers remained unchanged, and amitriptyline was added to the medication, starting at 25 mgs. t.i.d. and gradually increasing in dose until favorable results were obtained. The highest dose used was 50 mgs. q.i.d.

Amitriptyline was continued for 3 to 5 months. At the end of this period, 3 patients were completely free of depression, 17 showed considerable improvement in their depression, 5 slight improvement, and 3 no improvement. Of the 19 patients who had previously received imipramine, 16 were more improved on amitriptyline, and none gave evidence of aggravation of psychotic symptoms on the latter drug. Three patients responded to imipramine and amitriptyline in an equal manner, one with slight improvement and two with no improvement. As with imipramine, the antidepressant effect of amitriptyline was gradual, significant relief of depression appearing usually within 2-4 weeks.

¹ Rockland State Hospital, Orangeburg, N. Y.

² This drug was supplied by Merck Sharp & Dohme Laboratories, West Point, Pa.

Side-effects with amitriptyline were few. Two patients felt weak and dizzy in the first three days of therapy, but this symptom then disappeared. One became too stimulated and euphoric on 25 mgs. t.i.d., and this was controlled by reducing the dose to 25 mgs. b.i.d. Blood and urine examinations revealed no abnormalities during the course of the study.

In summary, amitriptyline hydrochloride

(Elavil) is an effective antidepressant. It resembles imipramine hydrochloride both chemically and in its clinical action, but it appears to have the advantage of more potent antidepressant effect and less proneness to exacerbate the symptoms of schizophrenia. Therefore, it is especially useful as an adjunct drug in the treatment of schizophrenics who manifest depression in addition to their other symptoms.

CHLORZOXAZONE AS AN ADJUNCT TO ELECTRIC CONVULSIVE THERAPY

OTTO L. BENDHEIM, M.D.¹

Chlorzoxazone² was studied in an effort to find a simple and effective oral relaxant to minimize the hazard of fractures resulting from seizures produced by electric convulsive therapy.

Chlorzoxazone, an orally effective skeletal muscle relaxant was used as premedication in 55 patients with depressive disorders who received from 2 to 18 electric convulsive treatments, so that a total of 464 were given throughout a one-year study period.

The dosage of chlorzoxazone was 1000 mgm. the night before and 500 to 1500

mgm. about two hours before the ECT, which was administered in the morning. The second dose varied with the weight of the patient and the intensity of the seizure anticipated.

Slight giddiness and muscular weakness in two older patients, requiring extra post-treatment bedrest, were the only side effects noted.

Patients receiving chlorzoxazone before electric convulsive therapy were found to be less tense and apprehensive and easier to handle. Premedication with chlorzoxazone resulted in a marked reduction of muscular pull during the electrically induced seizure, with concomitant sharp decrease in incidence of fractures.

¹ Medical Director, Phoenix Institute of Neurology and Psychiatry, Camelback Hospital, Phoenix, Arizona.

² The chlorzoxazone used in this study was supplied as Paraflex® by McNeil Laboratories, Philadelphia, Pa.

EVALUATION OF PLEXONAL AS A TRANQUILIZER IN THE GERIATRIC CARDIAC PATIENT

H. DAVANLOO, M.D.¹

Of all institutionalized patients, it seems fair to say that those in the older age brackets, the geriatric population, present the greatest therapeutic challenge. While the phenothiazines constitute a milestone in the treatment of emotional disorders, they have been less than satisfactory in controlling anxiety and agitation in the geriatric patient because of their propensity to in-

duce extrapyramidal stimulation and hypotension at dose levels below those which provide adequate tranquilization. Various sedatives have also been employed and found wanting because they are apt to induce confusion, disorientation and stupor in the aged patient.

Control of anxiety and tension has been an especially difficult problem in patients with cardiovascular disease. Accordingly, it

¹ Box 349, Waltham, Mass.

was with a good deal of interest that we noted the results reported by Scheifley² with the preparation, Plexonal.³ In a study conducted at the Mayo Clinic, he found this agent markedly effective in relieving anxiety, tension, and restlessness in hospitalized cardiac patients. We were particularly impressed by the decided superiority of Plexonal over meprobamate. It occurred to us that the results we had obtained with the latter, which we had used extensively in our patients, could serve as a yardstick by which we could measure the efficacy of Plexonal.

Plexonal² was tested in 40 patients in a female ward of Metropolitan State Hospital. Their ages ranged from 50-85 years and all demonstrated anxiety and restlessness associated with heightened heart consciousness and preoccupation with their blood pressures. At the time this study was initiated, 26 of these patients were receiving meprobamate for their anxiety and 21 were receiving sodium pentobarbital for insomnia. These drugs were withdrawn several days before instituting Plexonal. No change was made in the regimen of cardiotonic or hypotensive agents employed in the 15 cardiac patients and 10 hypertensives.

The dose of Plexonal ranged from 2 to 5

² Scheifley, C. H.: Proc. Staff Meet. Mayo Clin., 34: 408, Aug. 19, 1959.

³ Sandoz Pharmaceuticals. Contains: sodium phenobarbital 15 mg., sodium barbital 45 mg., Sodium sandoptal 25 mg., scopolamine HBr. 0.08 mg., Dihydroergotamine 0.16 mg.

tablets daily. Within 5 days, there was an appreciable reduction in restlessness and anxiety in 33 patients along with a noticeable improvement in mood. The most gratifying results were achieved in those with insomnia, which was relieved in 19 patients by a dose of one Plexonal tablet after each meal and two at bedtime. Depression in two patients was made worse and did not respond until imipramine was added to the daily dose of Plexonal. This combination was maintained for two weeks, after which the dose of Plexonal was gradually reduced until it was removed completely. No appreciable effect was observed in 3 patients, 2 of whom were classified as severe hypochondriac states, while another 2 patients reacted with excessive drowsiness.

A comparison of Plexonal with the therapy previously employed showed that 17 did better on Plexonal than on meprobamate, 6 did better on meprobamate than on Plexonal and 3 responded the same to both. Of the 21 who had received sodium pentobarbital earlier for insomnia, 16 demonstrated improved sleep patterns after switching to Plexonal.

SUMMARY

This study indicates that the integrated activity of the ingredients in Plexonal makes it an effective and well-tolerated preparation for the relief of anxiety and restlessness in the geriatric patient. A significant finding was the relief of insomnia which carried over from the daytime use of Plexonal.

CONTROL OF HYPERCHOLESTEREMIA AND HYPERLIPEMIA IN A NEUROPSYCHIATRIC HOSPITAL

J. R. SHAWVER, M.D., J. S. SCARBOROUGH, M.D., AND
S. M. TARNOWSKI, M.S.¹

A review of the literature indicates that the concept of association of atherosclerosis with levels of cholesterol and lipids is tentatively accepted. We were interested in the practicability of attempting to control this disorder of lipid metabolism in patients who are also subjected to intensive psychiatric therapy. Treatment was with massive

quantities of nicotinic acid as recently reported.²

Patients in this initial study have a common diagnosis of schizophrenic reaction, chronic undifferentiated type, one G.T.G. having had a leukotomy in 1954. Their ages vary from 26 to 42 and all are on different

¹ Veterans Administration Hospital, Waco, Tex.

² Parsons, W. B., Jr., and Flinn, J. H.: A.M.A. Arch. Int. Med., 103: 783, May 1959.

TABLE 1

NAME	DAYS	TOTAL CHOLESTEROL	TOTAL LIPIDS	PHOSPHOLIPIDS	LIPOPROTEIN	
		MG. %	MG. %	MG. %	BETA	ALPHA
W.J.J.	Control	570	5967	550	92.9	0.1
	30	460	3267	510	99	1
	60	249	1260	230	88	12
	Nicotinic Acid Reduced to 1.5 Gms./day (750 mg. b.i.d.)					
	90	270	1407	400	97	3
G.T.G.	Control	438	3367	860	97	2
	30	422	2867	445	98	2
	60	173	1157	160	81	21
	Nicotinic Acid Reduced to 1.5 Gms./day (750 mg. b.i.d.)					
	90	252	2277	312	97	3
W.E.W.	Control	348	1107			
	30	240	527	254	79	21
	60	145	490	130	77	23
	Nicotinic Acid Reduced to 1.5 Gms./day (750 mg. b.i.d.)					
	90	256	767	256	95	5

tranquilization drugs, promazine, chlorpromazine and reserpine. The period of hospitalization is from 4 to 9 years and adjustment is satisfactory only to the degree that each is on partial privilege. After an indicated control period, 3.0 Gms. of nicotinic acid was administered in the form of 750 mg. per capsule, q.i.d., while on a standard hospital diet throughout the study. The results at the end of 30 and 60 day intervals are seen in Table 1.

The reduction of hypercholesteremia and hyperlipemia was remarkable as reflected by values of total cholesterol, total lipids, phospholipids, and lipoproteins, the latter

being partitioned into beta and alpha fractions. No side reactions were noted in this small series of patients. After attaining optimal levels, nicotinic acid was reduced to 1.5 Gms. per day for an additional period of 30 days. This amount of drug failed to maintain previous levels, particularly in two of the individuals.

CONCLUSION

Control of hypercholesteremia and hyperlipemia in a neuropsychiatric hospital apparently is practical during treatment of psychotic patients employing massive amounts of nicotinic acid.

A CLINICAL TRIAL STUDY OF IMIPRAMINE HYDROCHLORIDE¹

NINA KATERYNIUK, M.D., AND CHARLES W. MORRIS, M.D.²

The present study involved 34 subjects: 18 women and 16 men, treated with the drug for 20 to 130 days (average 58 days). Diagnostic classifications are shown in Table 1.

Ages varied from 20 to 75 years, 31 of these patients had previous hospitalizations.

¹ Geigy Pharmaceuticals, Saw Mill River Road, Ardsley, New York, generously provided the imipramine hydrochloride used in this investigation.

² Respectively, Chief of Medical Staff and Clinical Director, Central State Hospital, Lakeland, Ky.

All showed need for treatment. Manifestations of depression differed according to the basic pathology involved, though several common features characterized the total group. Nine patients were severely depressed and suicidal. Subjects' response to previous treatments had been unsatisfactory.

Before the imipramine hydrochloride trial, all medicines other than those given for physical disorders were discontinued.

Three patients continued or started on electric shock treatment.

The average initial dose of imipramine hydrochloride, given orally, ranged from 50 to 75 mgs. per day, not exceeding 200 mgs. Duration of treatment was 20 to 130 days, with three-fourths of the patients receiving the drug for a period of 2 months.

All patients were examined immediately before, during and at the end of the observation period. The patient's physician and the nursing staff reported each subject's progress. Behavior, mood, verbal content, sleep patterns and appetite received close attention, the patients being encouraged to discuss their complaints and their emotional status.

Diminution or disappearance of pathological features, especially depression is designated as "improved." Lack of changes in symptoms is described as "unimproved"; and increase or aggravation is classified as "worse."

Twenty-seven (79%) patients improved; seven (21%) remained unimproved; and none became worse (Table 1).

TABLE 1

Diagnosis	Improved	Unimproved
Psychotic depression	7	2
Neurotic depression	5	0
Involuntional depression	1	1
Mental deficiency with psychosis	1	0
Organic brain syndrome	3	1
Paranoid reaction	1	0
Schizophrenic	9	3
Total	27	7

DISCUSSION

It is noteworthy that 3 manic-depressive depressed showed marked improvement after 4 to 6 weeks of treatment. Six patients improved when the drug was given in a combination with EST; 4 others, however, had not improved on EST several weeks before imipramine hydrochloride treatment. Six patients received the drug combined with tranquilizers to ameliorate mild excitement or sleep disturbance.

No allergic manifestations and no side effects other than transient episodes of dizziness, reported by 2 elderly patients, were observed. Temperature, pulse, respiration and blood pressure showed no aberration.

According to the available records, the improvement with imipramine hydrochloride observed in *schizophrenics* is *less well sustained and fluctuating*. In the majority of improved schizophrenics, imipramine hydrochloride given alone or in combination with tranquilizers replaced to an extent the indication for electric shock treatment. This refers to the schizophrenic "pseudo-depressive" states such as despondency, guilt, suicidal preoccupations, reduced spontaneity, withdrawal, etc. In general, schizophrenic subjects showed symptomatic improvement only.

All the patients who failed to improve had earlier failed to improve on conventional treatment methods.

In summary, 27 of 34 patients treated with imipramine hydrochloride showed distinct improvement. "Pure" depression (neurotic or psychotic) abated more readily than depressive symptoms in schizophrenia and brain syndrome.

METHAMINODIAZEPOXIDE (LIBRIUM) IN CHRONIC REFRACTORY ANXIETY

ALFRED H. VOGT, M.D.¹

In February of 1960, a quantity of methaminodiazepoxide was obtained from Roche Laboratories for the purpose of determining its effect in cases of chronic refractory anxiety. A group of 17 patients (12 women

and 5 men) was selected for the study, primarily, on the basis of being chronically "anxious" despite all previous treatment. The average stay in the hospital of these patients was about 2½ years. The average over-all length of illness was 33 months.

¹ Central Louisiana State Hospital, Pineville, La.

Previous treatment ranged from extensive individual psychotherapy, electroshock, and insulin shock to the use of one or more of the tranquilizers in all patients. Diagnostically they were categorized as follows:

Psychoneurosis, Anxiety Reaction	2
Psychoneurosis, Conversion Reaction	2
Psychoneurosis, Obsessive Compulsive Reaction	1
Childhood Schizophrenia	1
Schizophrenic Reaction, Chronic Undifferentiated type	5
Schizophrenic Reaction, Paranoid type	4
Unclassified Psychotic Reaction	1
Manic-Depressive Reaction, Depressed type	1

METHOD

Before treatment all patients were screened. This consisted of termination of previous medication, an evaluation of the physical and mental status, and the assessment of the patient's statements about his or her anxiety. Attendants, nurses, and physicians were asked to render their observations regarding each patient. Dosage schedules were defined so that each patient would receive 25 mgm. of methaminodiazepoxide 4 times a day for one month.

RESULTS

Improvement depended on clear cut observation by the staff that the patient was markedly, moderately, or slightly improved. Marked improvement refers to sustained relief of symptoms of restlessness, complaints of tension, excessive perspiration, inability to concentrate, and preoccupation. The markedly improved patient tended to participate in ward activities and to socialize more with other patients. Moderate improvement refers to the condition where the preceding features were less obvious and less sustained. Slight improvement refers to a selective relief from certain symptoms and little or no change in the patients' observed behavior. The categories of "unchanged" and "made worse" explain themselves. During the study period no patients received ECT. Two patients with severe thinking disorders required thifluoperazine or chlorpromazine to control disturbed behavior. One patient required meprobramate to go to sleep at night. The over-all results at the end of one month were as follows:

Marked Improvement	6
Moderate Improvement	7
Slight Improvement	1
Unchanged	1
Made Worse	2

Those patients who were "made worse" evidenced extremely aggravated behavior and severe thinking disorder after the first week of therapy; one complained to the nursing staff that the drug "seemed" to increase the symptoms of anxiety. Associated with this was the report that one patient had developed very active sexual preoccupations.

SIDE EFFECTS

Side effects encountered with methaminodiazepoxide were quite common when dosage schedules exceeded 100 mgm., at which time dosage was reduced. The usual reduction was to 50 mgm. per day. Very often side effects were seen when the dosage was again brought up to the 100 mgm. level after being previously reduced.

The following illustrates the nature and frequency of side effects of methaminodiazepoxide when the dosage is held at 100 mgm. per day:

Ataxia	3
Drowsiness	4
Palpitations	2
Intense erotic feelings	1
Dyspepsia	1
Slurring speech	1
Increased appetite	14
Deeper sleep with tendency to fall asleep while sitting in a chair or resting	6

One severely anxious schizophrenic female patient evidenced all of the side effects and was discontinued from the study after the second week. Reduction of the dosage to 50 mgm. per day alleviated the side effects but did not improve the anxiety or the psychosis. One male patient who was making a good adjustment to the drug initially became panicked after an argument with another patient. He was progressively more preoccupied with "killing" this person. He felt that he could not control himself and felt that the drug possibly contributed to his feeling so helpless in the face of his impulses. The drug was withheld, and the preoccupation rapidly disappeared.

CONCLUSION

Methaminodiazepoxide appears to be quite effective in a wide range of mental disorders where severe anxiety is present. In each instance where there was marked or moderate improvement in the study group, the patient became more sociable,

conversant, and noticeably less fearful and preoccupied.

I am grateful to the Roche Laboratories for supplying the drug used in this study, and to the staff of Warren State Hospital for their participation in this effort.

TREATMENT OF SCHIZOPHRENIA WITH PROKETAZINE

JANE E. OLTMAN, M.D., AND SAMUEL FRIEDMAN, M.D.¹

Proketazine,² a new phenothiazine compound, is similar in structure to perphenazine, the chlorine radical in perphenazine being replaced by a propanyl radical in proketazine. We have been using proketazine and its earlier analogue for approximately a year. The material for this study consisted entirely of female schizophrenic patients. Initially, a small group of 16 chronically ill patients was treated. These individuals had been ill for many years; their hospitalization ranged in duration from 3 to 31 years, with a median of 19 years. They had been previously, and unsuccessfully, treated with the usual gamut of somatic therapies and a variety of ataractic drugs. Initial dosage for this group was 100 mg. daily. This was increased progressively, by weekly increments of 50 mg., to 450 mg. daily, with a total treatment period of 8 weeks. Results in this group of hard-core schizophrenics were essentially negative. Some degree of mild behavioristic effect was noted in a few individuals, but significant improvement was lacking.

The major portion of the study was devoted to patients newly received on the female admission service. They represented a typical cross-section of schizophrenia. They ranged in age from 14 to 62; however, almost two-thirds were in the 3rd and 4th decades of life. The total duration of illness varied considerably—from a few days to 30 years. The duration of present illness was as follows: under 1 year—48%; 1 to 2 years—21%; over 2 years—31%. Dosage ranged chiefly from 50 to 150 mg. daily, and the

treatment period from 4 to 16 weeks. Of this group of 87 patients, 36 (41%) were much improved or in remission; 25 (29%) were improved, and 26 (30%) were essentially unimproved. For comparison, a smaller series of 18 patients treated by placebo therapy during the same period exhibited the following results: much improved, 11%; improved, 22%; and unimproved, 67%. The results with proketazine were generally similar to those obtained with perphenazine in a group of 44 patients treated during the same period.

More detailed analysis of the factors which contributed to successful results indicated that the latter were associated with features which have long been recognized as favorable prognostic criteria in dementia praecox. These are in the area of duration of present illness, type of onset and reaction of the patient, and type of symptomatology. Thus in approximately 80% of drug-treated patients who exhibited an A level of improvement (much improved or in remission) the present illness was less than 1 year in duration, whereas the illness was more than 2 years in duration in 65% of those with unsuccessful result. An A level of improvement was obtained in 72% of patients whose illness was characterized by relatively acute onset and whose reaction might be termed a vigorous one. On the other hand, only 21% of patients with an insidious type of onset, and a passive, constricted, non-vigorous type of reaction attained this level of improvement. With respect to type of symptomatology, some 75% of patients who experienced active delusions or hallucinations, acute feelings of unreality, ideas of reference and projection phenom-

¹ Fairfield State Hospital, Newtown, Conn.

² Generous supplies of Proketazine were furnished by Wyeth Laboratories, Philadelphia, Pa.

ena, especially if these were associated with a sense of impending danger or catastrophe, responded with maximal degree of improvement. On the other hand, patients whose thought processes were poorly organized, and characterized by rather diffuse fantasies, feelings of inadequacy or inferiority, vague gropings toward an ill-defined goal and expressions of all-pervading interpersonal difficulties, exhibited generally unrewarding results. In many instances, prokazine appeared to exhibit an almost specific anti-delusional and hallucinatory effect in the acutely ill patient.

Significant complications were absent. Liver function profiles and transaminase levels remained within normal limits. Side-

effects consisted chiefly of extrapyramidal features. Parkinsonism appeared in 11 patients, akathisia in 8, and both features in 6, for a total of 29%. As a rule, the Parkinsonism was relatively mild and it was readily controlled by appropriate drugs. Subjectively, akathisia was somewhat more troublesome. One patient exhibited oculogyric crises as part of the Parkinsonism syndrome. Somnolence was relatively mild; it usually disappeared with time.

In conclusion, therefore, it may be stated that prokazine is a satisfactory antipsychotic agent and that it is therapeutically effective in appropriate cases of schizophrenia.

THE VARIATION IN CLINICAL RESPONSE TO MARPLAN¹ WITH DURATION OF ILLNESS

ROBERT R. SCHOPBACH, M.D.²

This paper indicates that the effects of hydrazines upon depressions vary with the duration of the illness. A lowered serotonin metabolism in depression is also suggested. The 28 subjects were divided approximately equally between the sexes and between inpatients and outpatients. Each inpatient had a private room in a 24-bed open psychiatric floor of a 1,112-bed general hospital. Six full time psychiatrists and three residents gave close personal supervision and intensive therapy to these patients. All were treated by the author aided by the residents. There is a special occupational therapy unit on the floor and psychologic and social service assistance is constantly available. The average hospital stay is about three weeks. The sight of others recovering and going home enhances the favorable atmosphere for recovery. Thus improvement can never be attributed entirely to any medication and these factors may explain the almost immediate improvement of 3 of this group.

Routinely 30 mg. Marplan per day was

given either in one dose or divided to spread the psychologic effect of taking "that new medicine for depression that was described in the magazines." Usually this dose level was continued for 3 weeks, then gradually decreased and, after approximately two months, discontinued. In 2 cases in which the medication was discontinued prematurely or abruptly, the depression reappeared but was again dispelled by the medication.

Of the 28 patients only 6 were suffering from an acute depression, in the others the symptoms had been present for at least a few months and usually were associated with a chronic anxiety state or a long history of other neurotic difficulties. Of these 6 acute depressions 2 cleared within 1-2 days, making it doubtful that the drug was the responsible curative agent. Such responses are recorded as indeterminate. Three of the remaining 4 obtained relief within 3 weeks from Marplan alone. The fourth man demanded that everything possible be done as rapidly as possible; he was therefore given ECT in addition shortly after starting to take Marplan. He improved so markedly after only 2 ECT that he was discharged to continue taking the drug at home where he

¹ Marplan, a benzyl hydrazine, and a grant were generously furnished by Hoffman La Roche Company.

² Psychiatric Division, Henry Ford Hospital, Detroit 2, Mich.

continued to improve. This was a definite decrease in the number of ECT required to produce such a response when compared with similar patients not taking hydrazines.

The results in the group of 22 more chronically disturbed depressed patients were less gratifying. Eight did report complete relief and 2 of these even became slightly euphoric but this condition subsided when the dose was reduced. Three continued to have the same general neurotic complaints but were somewhat less despressed. Eight were unaffected by the drug. One of these later improved with imipramine and another with ECT while 6 remained depressed although still ambulatory. Three were classed as indeterminate; one lost all symptoms almost immediately after admission; the other 2 had considerable concomitant ECT and psychotherapy so that their improvement could not be attributed to any one factor. Thus, as with all therapies, Marplan is more effective in acute depressions but is still of definite value in those of longer duration. It may also serve to decrease the number of ECT needed.

It had been planned to obtain white blood counts and transaminase tests for liver function before and during drug therapy, but these were obtained in only 19 and 15 patients respectively. No significant alterations were found. The highest and lowest white blood counts during therapy were 9900 and 5350. The normal serum transaminase values are anything less than 30.³ Pretreatment values ran as high as 24 but during treatment the highest was only 14. There was a definite tendency for these values to decrease slightly during therapy. This may reflect a general improvement in dietary intake and physical well being. There was no clinical evidence of liver disorder among this group. There were some complaints of dryness of the mouth and of dizziness but only slight hypotension was observed and in no case was it necessary to decrease the medication because of these minor side effects.

³ Reitman, S., and Frankel, S.: *Am. J. Clin. Path.*, 28: 56, 1957.

INTERFERENCE OF INDICAN IN THE ESTIMATION OF PHENOTHIAZINE

JEROME LEVINE, M.D., DONALD LEVINE, B.A.,¹ AND
S. MOUCHLY SMALL, M.D.²

Recently several articles concerning the detection of phenothiazine derivatives and their metabolites in the urine have been published(1-7). These tests were designed to offer a simple and immediate check of whether a prescribed dosage of phenothiazine had actually been ingested by a psychiatric patient either in a hospital setting or in private practice.

These tests were performed in our laboratory and a high percentage of false positives was found with many of the tests. Heyman (7) reports approximately 15% false positives with both the Forrest Universal and Forrest Piperazine-linked Phenothiazine

Tests. In addition a poor correlation was found in most instances between the amount of phenothiazine ingested and the color produced.

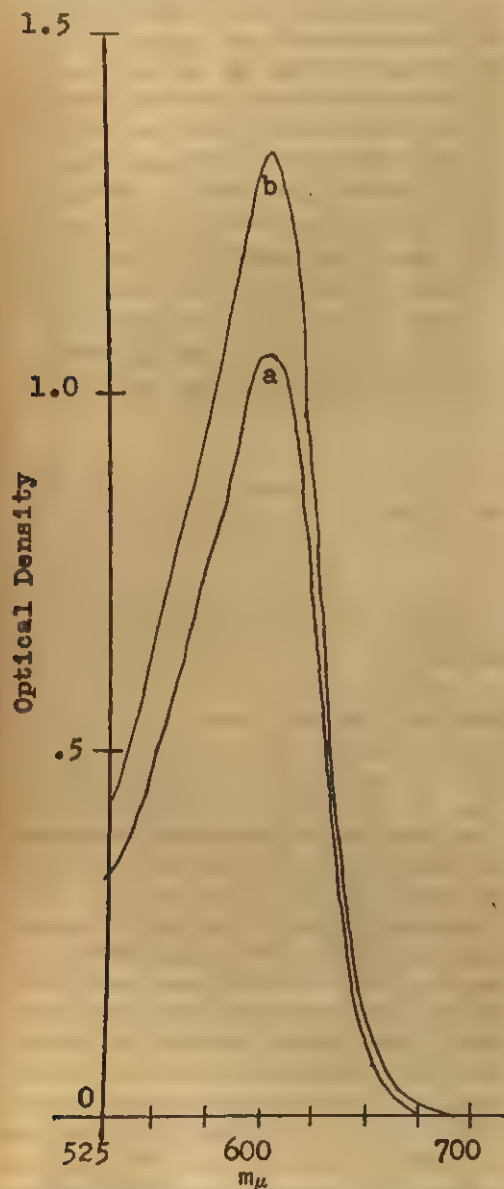
One major cause of the false positives and poor quantitative results was found. The reagents in the Forrest Vesprin Test(3), the Forrest Piperazine-linked Phenothiazine Test(4), the Forrest Universal Test(5), and the Forrest Thioridazine Test(6) cause a blue color production in the presence of indican. Indican is a degradation product of tryptophan; it is a normal constituent of urine and the amount present is a function of diet, peristaltic activity, intestinal putrefaction and other factors. No color due to the presence of indican was caused by the reagents in the Forrest Chlorpromazine, Promazine and Pacatal Test(1, 2).

¹ Supported in part by National Institute of Mental Health, Summer Fellowship Grant 2M-6004-C4.

² From Department of Psychiatry, Edward J. Meyer Memorial Hospital, Buffalo, N. Y.

If the urine contains a significant amount of indican (as shown by the Obermayer Test) and is tested for the presence of phenothiazine, a false positive or an increased amount of color may result.

The fact that the color produced is due to indican was proved in the following man-



Spectral absorption of chloroform layer obtained from (a) Obermayer Test (for indican) (b) Forrest Test(4).

ner: Control urines (from persons not receiving phenothiazines) were examined with the tests proposed by Forrest(3-6). Those which gave a color were immediately extracted with chloroform and a sky-blue color appeared in the chloroform layer. The chloroform layer was then analyzed spectrophotometrically. The Obermayer Test was performed on a sample of the same urine and the resulting chloroform layer was also analyzed spectrophotometrically. The absorption spectra obtained with a Cary Model 11 Recording Spectrophotometer⁸ appear below. Since the curves are so similar it is concluded that the color produced by the phenothiazine tests are due to the presence of indican. In addition, the curves are in agreement with that proposed by Rimington(8) for indican.

The color production due to indican can be prevented by the addition of a drop of formaldehyde to the urine. Unfortunately, when testing for phenothiazines, the formaldehyde reacts in some way with the urine and test reagents to form an interfering pink color.

A test which eliminates the production of color due to indican is currently being devised. We recommend that the commonly used phenothiazine tests(3-6) be re-evaluated in view of this finding.

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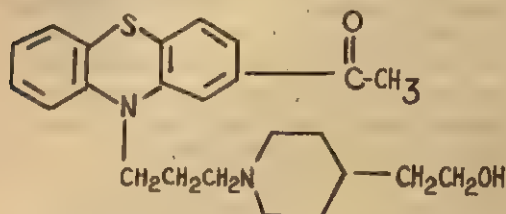
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⁸ This instrument was made available by Dr. Max E. Hicote and used with the assistance of his staff.

CLINICAL EXPERIENCE WITH A NEW PHENOTHIAZINE (PIPERACETAZINE)¹

K. HAWORTH, M.D., L. M. JONES, M.D., AND W. MANDEL, M.D.²

Piperacetazine is a new phenothiazine derivative of the piperidine series (2-Acetyl-10-[3-[4-(B-hydroxyethyl) piperidino]propyl]-phenothiazine) with the following structural formula :



Clinical experience with this drug was gained in observing its effects in 75 recently admitted psychiatric patients, 43 men and 32 women, considered suitable for treatment with phenothiazine medication. The diagnoses were: schizophrenic reactions, 56 (paranoid, 18; catatonic, 12; schizoaffective, 8; undifferentiated, 18), affective reactions, 14, and nonpsychotic reactions, 5. The patients' ages varied between 16 and 67 years, the mean being 32 years. Observations were made only during the patients' stay on an acute treatment ward. Global ratings of marked, moderate, slight, or no improvement in terms of mental status and behavior were made in each patient at the termination of his treatment. A C.B.C., urinalysis, serum bilirubin and serum glutamic pyruvic transaminase were performed prior to the start of drug, at the second and fourth weeks and each month thereafter as long as the patient was receiving piperacetazine. When elevated serum transaminase values occurred, weekly determinations were performed until the values returned to the normal range.

Treatment was started in oral dosages of 5 to 10 mg. b.i.d. or t.i.d. and was progressively increased until improvement or

side reactions occurred. The duration of treatment varied from 6 to 165 days, the mean being 67 days for the men, 41 days for the women and 54 days for both sexes. The daily maintenance dose ranged from 15 to 200 mg., the mean daily dose being 90 mg. for the men and 40 mg. for the women.

There was marked improvement in 28 patients, moderate improvement in 19, slight improvement in 4 and no improvement in 19. Five were treated for less than 10 days which was considered too short a time for adequate evaluation; 9 patients in whom the drug was stopped because of side reactions were included in this evaluation.

The number of side reactions totaled 55, 19 patients having 1, 9 having 2, and 6 having 3 reactions. These side effects were reversible in all instances following either reduction in dosage or cessation of piperacetazine or use of antiparkinsonian compounds. Drowsiness and sedation were common with high daily doses (100 to 200 mg.), and disappeared rapidly when the dose was reduced. Dizziness and syncope occurred in 7 patients early in the study when the starting daily dosage averaged 20 to 30 mg. and did not occur later when the starting dosage was 5 to 15 mg. Pitting edema was noted in 9 women. The edema was distributed in the periorbital region in 1, on the face in 2, on the feet in 2, and on the hands and feet in 4 patients. It disappeared with cessation of piperacetazine, recurring in some but not in other patients when the drug was restarted. An erythematous dermatitis distributed over the face and neck was seen in 5 women. This rash was non-pruritic and subsided rapidly when the drug was stopped, recurring in some patients and not in others when treatment was reinstituted. The edema and dermatitis coexisted in 3 patients.

Akathisia was noted in 1 man and 2 women. The parkinsonian reaction was observed in 3 men who were on high daily doses (200 mg.) of piperacetazine and who

¹ Supplied as Quide by Pitman-Moore Company, Indianapolis, Ind.

² Respectively, Resident Psychiatrist, Staff Psychiatrist and Chief of Research; Napa State Hospital, Imola, Calif.

had been treated for at least 60 days. These extrapyramidal reactions responded rapidly to treatment with antiparkinsonian compounds or to reduction in dosage of piperacetazine. No significant alterations of the laboratory studies occurred in any patient.

In common with other phenothiazine derivatives, piperacetazine was more effective in the hostile, aggressive, hyperactive, anxious and tense than in the regressed, withdrawn or apathetic patient. In addition to its allaying of psychomotor agitation, it reduced such psychotic manifestations as hallucinatory experiences and delusional thinking. The satisfactory daily maintenance dosage ranged from 30 to 100 mg.; daily doses above 150 mg. increased the incidence

of side reactions, particularly drowsiness and sedation, without noticeably increasing the therapeutic effectiveness. No serious side reactions were encountered and the incidence of extrapyramidal reactions was low.

SUMMARY

Piperacetazine, a new phenothiazine derivative of the piperidine series, was clinically evaluated in 75 recently admitted hospitalized psychiatric patients. Its over-all effectiveness in the treatment of the acute psychiatric disorders studied appeared comparable to that of other commonly used phenothiazine derivatives. The incidence of extrapyramidal reactions was low.

WILLIAM RUSH DUNTON, JR.
PIONEER IN REHABILITATION MEDICINE.

A Canadian Tribute

HELEN P. LE VESCONTE, O.T.R.¹

On July 24, 1960, William Rush Dunton, Jr., M.D., celebrated his ninety-second birthday. To him occupational therapists the world over owe much. In the May-June issue of the *American Journal of Occupational Therapy*, members of that Association have paid their tribute to Dr. Dunton whom many of them have been privileged to know as a wise counsellor, a staunch friend and an outstanding physician.

To Dr. Dunton, one of the founders and first president of the National Society for the Promotion of Occupational Therapy, (now the American Occupational Therapy Association); founder and for over 20 years editor of the *Archives of Occupational Therapy & Rehabilitation*, and since 1947 the *American Journal of Occupational Therapy*; author of the first text books on this subject, Canadian occupational therapists may also pay their tribute.

Many Canadian therapists who have not known Dr. Dunton personally, have known him through his writings, for until 1947 when Willard & Spackman published *Principles & Practices of Occupational Therapy*, Dr. Dunton's book *Prescribing Occupational Therapy*, first published in 1928, was the only general text book on the subject used on this continent.

Prior to the writing of this book he had published two text books, *Occupation Therapy* (1915), and *Reconstruction Therapy* in 1919. It was not until 1917 that the term "occupational therapy" was officially adopted, and the older term "reconstruction therapy" continued in use for some years, particularly in the military hospitals of both the United States and of Canada. It is interesting to note that *Prescribing Occupational Therapy* was written as a guide to general physicians. "It has been felt," the author writes in his Foreword, "by those

interested in the promotion of occupational therapy that a more general use of this form of treatment would not be attained until physicians are taught more concerning it and until they know how properly to prescribe its use." Part 1 of this book outlines the general philosophy, principles and the prescription; Part 2 describes the specific application in medical and surgical conditions, orthopedics, tuberculosis, mental disorders, cardiac conditions and pediatrics.

Dr. Dunton's concept and vision of occupational therapy and his concern for the development of professional training and practice were not limited by geographical boundaries. Nor was his chief concern its application in the field of mental disorders in which he has had a long and distinguished career. Of his great contribution in this special field there is no need to write here. It is in the wider field of physical disability that his contribution has been of special importance. His keen appreciation of what total rehabilitation involves, his knowledge of what pioneering physicians, therapists, psychologists and vocational counsellors were doing and thinking, the accurate dissemination of this knowledge through his books and the professional journals—these were the significant things.

Around 1915 there was a keen awareness in both Canada and the United States of the potentials of rehabilitation. In *Reconstruction Therapy* for example, several references are made to the "remarkable work" done by the Canadian Military Hospitals Commission, under the direction of Mr. T. B. Kidner of Alberta, in the development of vocational rehabilitation. Dr. Dunton had become deeply interested in the work of Dr. Herbert Hall, who even prior to 1915 published a number of articles on the problems of the tuberculous patient, particularly in the area of vocational rehabilitation. In these articles and studies Dr. Hall constantly stressed the importance

¹ Division of Rehabilitation Medicine, Faculty of Medicine, University of Toronto, Ont.

of work conditioning and pre-vocational assessment. Both in his books and in the early issues of the *Archives of Occupational Therapy*, Dr. Dunton also drew attention to the work of Frank B. and Lillian Gilbreth on energy conservation and the effects in industry of reduction of fatigue in workers by the elimination of useless motions. These studies were based on observations, made through motion pictures, of the actions of different workers doing the same type of work. Dr. Dunton immediately saw the significance of the Gilbreths' work to the occupational therapist. He emphasized the therapist's need to know the "feel of the tool," and how it is used, and to analyze these features in detail. He stressed the importance of ingenuity in adapting the apparatus used to restore particular movements; that substitution of good muscle must be guarded against in treatment; and that always in treatment the "method of work is more important than the work itself."

For the individual handicapped by loss of a limb, Dr. Dunton recognized the fundamental importance of what today, we term "activities of daily living," when he pointed out that the first need was the formation of habits compensating for the loss; 1—toilet, dressing and washing; 2—feeding oneself easily and comfortably; 3—if necessary, re-education in movements to aid in one's vocation, or to a new one to which he is better suited, by means of pre-vocational training. In *Reconstruction Therapy* he devoted a chapter to the work of Dr. Jules Amar of France, in the development of more functionally useful prostheses. This chapter contains some 20 photographs of terminal devices to facilitate carrying out of self-help activities and for various types of work. These devices are remarkably similar to those used today in the prosthetic training of the industrial accident patient. This chapter also includes an interesting section on the methods and devices developed by Judge Quentin Corley of Dallas, Texas. In 1905 Mr. Corley was severely injured and as a result lost his right arm, scapula and clavicle and also his left hand. Through his own ingenuity he evolved a device which enabled him to carry out all acts of self-help,

e.g., to write, fold and place a letter in an envelope, pick up large and small objects, drive a car, swim, dive and bowl.

As founder and editor of *Occupational Therapy & Rehabilitation*, Dr. Dunton set a standard of professional journals which is impressive both in the quality of the material and the variety, and which he consistently maintained. The first volume was published in 1922 in 6 bi-monthly issues, and in the first two volumes are found articles on 26 subjects which include, in addition to those dealing with medical, surgical, orthopedic and mental disorders, home service and disabled homemaker training, industrial accidents, pre-vocational and vocational training, sheltered employment, music, drama, and recreation as therapeutic media, training of personnel, administration and organization, records, research, the relationship of the occupational therapist to the visiting nurse, the social worker, and in the community and general welfare problems. Constantly there is emphasis on the importance of vocational rehabilitation and the use of activities which provide new channels of economic value for patients who require partial or complete re-education.

One need scan only briefly the writings of Dr. Dunton, to see how clearly he had envisaged and identified the total rehabilitation concept, and the place and contribution of occupational therapy throughout treatment, in the development of orthotic devices and self-help training, in prosthetic training, in pre-vocational assessment, and long range planning for the patient.

William Rush Dunton is indeed one of the important pioneers in the teaching, preaching and practice of rehabilitation medicine. As a mouthpiece of physicians, occupational therapists and above all their patients, he has left a record of the development of these areas which today is a "favoured child" of physical and mental rehabilitation. More truly we should say the *foster* child, for when it was conceived history does not record. But over 40 years ago Dr. Dunton had recognized it as one of the great challenges and responsibilities for those who truly seek to serve the sick and disabled.

COMMENTS

CHILD PSYCHIATRY IN JAPAN

Child psychiatry has made rapid advances in Japan in the past few years. These have culminated in a series of events which indicate vigorous activity and promise of major contributions. In January 1960, the first issue of a quarterly, the *Japanese Journal of Child Psychiatry*, was published; the editorial board is made up of not fewer than 65 members. At the invitation of the editors, Leo Kanner contributed a Note of Welcome. The papers are, of course, written in Japanese but to each article an English abstract is appended. The table of contents of the first issue may serve as an illustration of the range of interests and research topics: Perspective of Child Psychiatry in Japan; A Psychopathological Study of Daydreaming in Early Child Schizophrenia; Case Report of Childhood Schizophrenia, with a discussion of its genesis and classification; A Study of Obsessive-Compulsive Phenomena in Childhood; Psychic Symptoms, especially the Autistic Tendency, of Mentally Retarded Children; Mechanisms and Factors Contributing to the Formation of Childhood Mutism; The Development of Language in Infants. Two additional issues have appeared to date. The second is devoted largely to various aspects of mental deficiency; the third, besides a number of articles on drug treatment, play therapy, genetic factors, stuttering, and schizophrenia, contains a symposium on experiences in the management of psychiatric clinics for children. The papers are of high caliber and would do honor to an American

journal of child psychiatry—if we had one. Most of them come from psychiatric departments connected with (11) medical schools, a few from departments of education and of psychology, several from the National Institute of Mental Health, and one each from departments of obstetrics and pediatrics, and two from the Institute for Physical and Mental Health of Mothers and Children. Every one of the three issues contains abstracts of selected articles from the literature in other countries.

During 1960, also, Drs. Makita (who has had his training in child psychiatry at the Johns Hopkins Hospital) and Kuromaru have completed the Japanese translation of Kanner's *Child Psychiatry*.

It was felt for some time that the growing interest and the increasing number of workers in the field called for an opportunity for nation-wide collaboration. This was done in a number of annual meetings, the last (third) held early this year at Kurume Medical College under the chairmanship of Prof. Kuromaru. However, as the next important step, the leading men in Japan are now in the process of organizing the Japanese Association of Child Psychiatry at a meeting in Tokyo on November 17 and 18, 1960, under the aegis of Professors Kuromaru, Makita, Takagi, and others. This official act brings our Japanese colleagues definitely into the international family of child psychiatrists. Needless to say that they are assured of a cordial welcome.

L.K.

BELIEF

There's no belief so settled as not to be exposed to further inquiry. . . —JOHN DEWEY

CORRESPONDENCE

PSYCHIATRISTS IN CORRECTIONAL INSTITUTIONS

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY :

SIR : In the September 1960 *Journal*, pp. 272-273, I note the comments about Dr. Warren S. Wille's article on "Psychiatric Facilities in Prisons . . .," which appeared in the December 1957 issue. James A. McCafferty states that "the only previous survey was done by Dr. Winfred Overholser in 1926," which indicates that the literature was not adequately covered.

In 1932, while I was Director of Classification for the New York State Department of Correction at the Elmira Reformatory, the Salmon Memorial Committee of the New York Academy of Medicine gave me a grant to carry out a study of psychiatric

work in prisons throughout the United States, towards the possibility of preparing a textbook on the "Classification of Prisoners." A survey was carried out on every prison in the United States, and the textbook was written. Also the results were summarized in a paper presented before the New York Academy of Medicine on December 12, 1933 and were published in the *American Journal of Orthopsychiatry*, April 1934.

Unfortunately, psychiatric work in prisons since that time has been more or less at a standstill.

James L. McCartney, M.D., LF APA,
Garden City, N. Y.

REPLY TO THE FOREGOING

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY :

SIR : Dr. McCartney appears to have quoted a part of a sentence in my letter that should be attributed to Dr. Wille's paper, namely : "The study by Dr. Wille indicates that his project covered the year 1954 and that *the only previous survey was done by Dr. Winfred Overholser in 1926*" Dr. McCartney gives me undue credit for the underlined portion of the statement. This infers that I overlooked other literature on the subject of psychiatric personnel in correctional institutions.

My letter was not aimed at providing a list of prior surveys but merely to indicate that national statistics on psychiatric personnel in correctional work have been available for many years in the National Prisoner

Statistics series published by the Bureau of Prisons.

Incidentally, besides Dr. McCartney's material, and doubtless many other references, Dr. Norman Neiburg, Director, Division of Psychological Research and Legal Medicine, 33 Broad Street, Boston, Massachusetts recently completed an inventory on psychiatric, psychological and psychiatric social worker personnel employed in State and Federal correctional institutions.

In this discussion perhaps we have overlooked an essential point, the need for more psychiatrists in corrections. Perhaps our combined efforts will attract some of your readers to this important endeavor.

James A. McCafferty, Criminologist,
Research and Statistics Branch,
United States Department of Justice.

DIAGNOSES ON INSURANCE PAPERS

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY :

SIR : During the past few years there has been a marked trend towards the inclusion of psychiatric treatment under medical and hospital insurance policies. This has been a

most welcome development, but it has not been without its problems.

One of the difficulties that frequently arises is that the completed insurance form has to pass through the place of employment of the patient and either has to be

filled in by the employer or must be forwarded by them to the main office of the company. Additionally, many forms have to be given directly to the patient.

Under these conditions, it is most difficult to keep the nature of the patient's illness confidential. Certain diagnoses would tend to spread alarm among the patient's business associates and might even endanger his job security.

A solution suggested to me by a colleague, Dr. William F. Gibbs, overcomes this problem in a simple, straightforward way. Instead of writing in the

diagnosis of the patient's psychiatric condition, the official code number of the illness is substituted. This has worked extremely well. On a few occasions, an insurance company has contacted me for clarification, but otherwise, there have been no problems associated with this solution.

Perhaps other psychiatrists would wish to adopt this simple measure as a more or less standard procedure for the completion of insurance forms.

Michael J. Keith, M.D.,
Norfolk, Va.

IS PSYCHOTHERAPY A SCIENCE ?

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY :

SIR : The stimulus to write these lines came from a book *Psychotherapists in Action*. I had to write a review of this book for *Psychiatria et Neurologia*, and am not going to review it here. The author, Hans H. Strupp, is anxious to emphasize the difference between the research psychologist and the psychotherapist. He is a research psychologist.

This is not the first and probably not the last attempt to turn psychotherapy into a science. Many persons seem still to harbor the idea that psychotherapy would be "really respectable" if it were a science. It is understandable, yet not logical, that a psychologist who considers his work as research on psychotherapy, essays an approach through the use of scientific methods. The absurd implication might be made that any field of knowledge and/or practice could be "scientified" by the sheer application of scientific methods. It is almost embarrassing to remind our colleagues of this fact: it is not the methodology which "makes" a discipline a science; it is the approachability of the field concerned which is at the root of this qualification.

Psychotherapeutic practice is basically support of one person by another—that is, in general, of a patient by a psychotherapist. This support demands confidence and respect on both sides. Support, confidence, respect and other subtleties make the "interaction" possible—none of them is measur-

able. Strupp appears to comprehend this, for he writes: "In order to expand scientific knowledge of the therapeutic process, it is necessary to objectify essentially subjective experiences, but as one succeeds in doing so, one runs the danger of sacrificing the essence of what one is studying."

Nevertheless he used his scientific methods, and he still seems to hope to do better in the future, heroically essaying to overcome his unmistakable and not inconsiderable frustration which, incidentally, is also not measurable.

We have been doing psychotherapy in our professional life as well as we could. We realize its indispensability. This realization is one of the reasons for which we cannot remain mute with respect to all the claims made concerning psychotherapy. We, the psychiatrists, have to plead guilty as regards the development psychotherapy was allowed to take in theory and practice.

Since we consider support the core of any psychotherapy, we might be suspected of holding that everybody can learn and teach it well enough through some good drilling and training. This is not our opinion. We are, indeed, convinced that the ability to teach and the ability to learn psychotherapy are quite limited. Regardless of all the discussions on learning psychotherapy and, regardless of the increasing number of places where training is being offered, one point ought not to be forgotten. There is something in psychotherapy that cannot be either taught or learned. Sir William Osler had "it"

without ever going through any psychotherapeutic school. Call it intuition or fingertips or what else you want, this "it" is on the same level as the creative gift of the artist—the gift which distinguishes the artist from the dilettante and the amateur. Some call it the divine spark—why not?

If one remembers this, one cannot but be sadly amused about the endeavor to get

hold scientifically of "interaction"—rewriting practically the volumes about it that only recently have been studied on the subject of transference. Perhaps the time will come when all this will be moderately well understood, though not scientifically analysed, under the modest label of rapport.

Eugen Kahn, M.D.,
Houston, Texas.

REVISED SURVEY OF SELECTED PSYCHOPHARMACOLOGICAL AGENTS

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY :

SIR : In the November, 1960 edition of the *Journal*, Cattell and Malitz have a review of the "Revised Survey of Selected Psychopharmacological Agents." They include a statement concerning prochlorperazine (Compazine SKF). They report that there have been no instances of jaundice with this drug. This is not the case. I have seen 2 patients who have had marked jaundice associated with the administration of Compazine. In both instances the jaundice was self limited and cleared after the removal of the drug. In one patient the jaundice appeared on the seventh day of treatment. In the other patient it did not appear until 2 months following the onset of Compazine therapy. In both instances there could be

no confusion as to the etiology, for the patients were on no other medication and careful clinical and laboratory studies were not indicative of other etiologic sources.

From a laboratory standpoint, one of the patients showed the following : Serum bilirubin, 5.3 mg.%, 4+ bile in urine, serum protein partition studies reveal no abnormalities, Serum alkaline phosphatase, 15K.A. units, cephalin flocculation and thymol turbidity negative. Prothrombin 17 seconds (normal 14). Other blood studies were in a normal range.

I would like to record this information to avoid any confusion in the minds of your readers.

Stanley Lesse, M.D.,
Neurological Institute of New York,
New York 32, N. Y.

OFFICIAL REPORTS

REPORT OF THE COORDINATING COMMITTEE ON PROFESSIONAL STANDARDS IN PSYCHIATRY

1. The first committee of this group is the Committee in Liaison with the American Academy of General Practice, which has functioned under the chairmanship of Dr. Robert Matthews. This committee has been working jointly with the Mental Health Committee of the American Academy of General Practice and has maintained both formal and informal communication with members of that committee throughout the year. There is a General Practitioner Education Project in the office of the Medical Director of the American Psychiatric Association with a director, Dr. William F. Sheeley. Dr. Sheeley and the committee have worked closely together.

The committee has used all channels of communication available to it including articles in the journal *Mental Hospitals* and the *APA Mailpouch*. It is exploring the use of State Hospitals as a locale for courses in psychiatry for general practitioners. It has worked closely with the out-going Speaker of the Assembly of District Branches and has made use of the communications machinery which he has set up.

It is gratifying to report that there is a high degree of interest in the Academy of General Practice in the problem of post-graduate psychiatric education for general practitioners. It is, however, distressing to report that this interest is considerably higher in the AAGP than in the APA. The Committee sees a need to point out to the members of the APA that they have a responsibility to undertake joint teaching activities with local units of the AAGP; assures them that they will derive much personal satisfaction and professional advantage from such relationships; and hopes that they will make every effort to correct this discrepancy of interest.

2. The Committee in Liaison with the American Hospital Association has operated under the chairmanship of Dr. Raymond Waggoner. This Committee has been extremely active. There have been two

meetings jointly with the corresponding Committee of the AHA since our own Committee meetings in Detroit last fall. The Committee has completed its work on the brochure "Psychiatric Units in General Hospitals" which is to be published by the AHA after approval by the Council of the APA. The brochure is being presented to the Council on Thursday for its approval.

The Committee has also been concerned with the growing development and expansion of psychiatric units in general hospitals and with potential difficulties which may come up in relation to involuntary detention in locked facilities in such units. It has a resolution pertaining to such detentions and proposes to present this to the Council for action and approval.

3. The Committee on Mental Hospitals. This Committee has been chaired by Dr. Joseph E. Barrett. It has been concerned in the past year, as it has in previous years, with the problems which confront the mental hospital at this moment in a changing culture in relation to mental hospitals. The Committee was somewhat critically concerned with a brochure on general principles and guides for psychiatric units in general hospitals prepared by the office of the Medical Director and has worked with him to produce modification of this in a direction more satisfactory to everybody concerned. It has continued to deal with the many problems that confront the mental hospitals of the nation.

4. The Committee on Nomenclature and Statistics is another of our hard-working Committees which operates under the chairmanship of Dr. Moses Frohlich. It has held several meetings in addition to the usual fall meeting held by most of our committees. This Committee has just now completed revision of the classification and nomenclature for the 1960 edition of the A.M.A. "Standard Nomenclature of Diseases and Operations." It will be of interest to the members of the Association that al-

though a great deal of work has been done by the Committee, and a thorough review made, the revisions proved necessary were found to be relatively minor in degree and few in number.

The Committee has come also, during this year, close to completion of the revision of the Diagnostic and Statistical Manual published by the APA. There has been an attempt to sharpen the objective criteria for classifying and to improve uniformity in the use of the classifications.

The third major project of the Committee has been to work on the preparation of a manual on "The Gathering and Use of Data in Psychiatric Facilities" but this has been largely in abeyance due to the pressure of revision of the "classification." Further work will need to be done on this and it is hoped that this can be completed soon.

5. The Committee on Private Practice, under the chairmanship of Dr. John Cotton, has continued its extremely important and interesting work. It has been concerned in the last several years with the question of health insurance for psychiatric illness. It is gratifying to report that there seems to be now a definite trend throughout the country to include psychiatric care in hospitalization insurance. This has been in part due to the increasing number of psychiatric services in general hospitals. There are now almost 1000 such units and many more planned and it appears to the Committee that this is the most important development in the past 15 years to concern the private practice of psychiatry. The Committee continues with its plans to make a study of the variety of services offered by general hospital psychiatric units, and hopes to obtain funds from private sources to finance such a study.

6. The Committee on Psychiatric Nursing has been headed by Dr. Granville Jones. This Committee has worked with equivalent groups from the Nursing Organizations and has continued to seek more exact definitions and more comprehensive ideas of psychiatric nursing and the function of the psychiatric nurse. As you are well aware, the role of this particular one of our professional colleagues is currently undergoing changes, and the Committee hopes to continue to explore what these role changes

are and how to clarify them. There is some thought that a general conference on this topic might be helpful.

This Committee recognizes that it deals with only one of the many disciplines involved in patient care but because the National League for Nursing and the American Nurses Association have suggested it, this Committee is prepared to urge that the APA call a multi-disciplinary conference to explore means of improving total patient care with particular emphasis on in-service education.

Under the general aegis of your Committee the seminar project for teachers of psychiatric aides was set up. This project is now approaching completion. The seminars have all been held and the director and the psychological consultant are analyzing the results preparatory to writing a full report. Your Committee believes that this has been a most successful venture and trusts that the report will be a real contribution to the literature on aide education.

7. The Committee on Psychiatric Social Work has been extremely active. Dr. Maurice Friend as chairman has stimulated his Committee into many fields of activity. The Committee has kept close contact with various individuals and consultants from the National Association of Social Workers, Psychiatric Section, and has made use of the *Social Workers Newsletter* for communication. It has also been in contact with our own District Branches.

The Committee on Psychiatric Social Work is aware of the proposal reported immediately above for a conference on patient care and expresses its interest in participating in such a conference.

At several places, sub-committees on psychiatric social work are working closely with the parent Committee. The parent Committee is watching also with interest and helping in any way it can in certain special studies being carried out by local sections of the National Association of Social Workers.

Finally, but not least, the Committee has been very much concerned with the problem of recruitment of personnel into the social work field.

8. Your Committee on Psychiatry and the Law (you will note the change of name

which was authorized last year) has been chaired by Dr. Louis Gendreau. This Committee has been for some time concerned with the problem of privilege in the relationship between psychiatrist and patient, with commitment laws and their uniformity and with other matters that involve the many intriguing inter-relationships between psychiatry and the law. While it has not been able to make many very specific recommendations, it feels it is having an effect on many of these matters in many states and is pleased to report that at least one state has now adopted a statute which gives privilege to the relationship between a psychiatrist and his patient in therapy.

9. One of the most important committees of your association in view of the present cultural and social situation is that on Relations with Psychology. Dr. Joel S. Handler, taking over this Committee only a year ago, has done a great deal to ease some of the difficulties between us and our colleagues of the other APA. Meetings have been re-established with the other group after a break in communication of two years. A statement has been prepared, approved by Council and published in the *Journal* of the APA. Discussions will continue of such basic issues as medical responsibility for the welfare of the patient, the question of the independent practice of psychotherapy by the psychologist and the matter of local liaison between District Branches of our APA with their opposite numbers in the State Psychological Societies.

The Committee feels very strongly that legislation is not the answer to any of the problems of either of the APAs. It feels rather that there must be continuous free communication and discussion, so that there can result a final implementation, by a continuous process of joint responsibility, of training in the ethical problems involved in the relationship of the two professional disciplines at local levels. The Committee believes that some of the chill which was developing between the two disciplines has been dispelled by its activities. Dr. Felix, our incoming president, has been most interested in this problem, and has worked with the Chairman of the Committee and with the full Committee on several occa-

sions in an attempt to solve the complex problems which have come up.

10. The Committee on Standards and Policies of Hospitals and Clinics, has been chaired in the past year by Dr. T. Stewart Ginsberg. This Committee has worked in two basic fields: hospitals and clinics. At the same time, however, it has recognized many recent changes in the situation and the need for a complete re-evaluation of the whole matter of Standards and Policies for both hospitals and clinics. It has prepared a proposal for a long and detailed study of the matter with conferences and exchange of ideas and is in process of seeking support for such a project which it is hopeful it will obtain in the near future.

11. One Ad Hoc Committee, that on An Organization for Mental Hospital Personnel, under the chairmanship of Dr. Marion Kenworthy, has also reported to this Coordinating Committee. The problems involved have been discussed at a number of meetings and recommendations made to the Council. The basic recommendation has been that such a group be tried out on a pilot basis at a local level, in relation to a Divisional Meeting, and it is hoped that implementation of this recommendation will soon occur.

In such a brief period today it is difficult to give you more than a suggestion of the amount of work and thought that has gone into the Committee activities in the past year. Since this marks the termination of my assignment as Coordinating Chairman of this group of Committees, I should like to take this opportunity to thank all of the Chairmen and Committee members who have made, in the past several years, my job so much easier than it might have been. I should like to thank the Medical Director and his Staff and the Executive Assistant and his Staff for invaluable assistance. The officers of the Association, over the several years, have had a clear understanding of what committee work and coordinating committee work ought to be and, of course, it has been possible to work collaboratively and cooperatively with all of them. The Coordinating Chairmen of the other two groups have been, and I hope will continue to be, my friends as well as my collaborators in this total committee effort.

Because I am now leaving this position, I should like to take the opportunity to say to you how important and how useful I think this technique of the establishment of coordinating committees has been for the work of the Association. You will recall that it was in the presidency of Dr. John Whitehorn that these Coordinating Committees were set up, on the basis of a recommendation made by the Committee on Com-

mittees, which studied the whole matter under the chairmanship of Dr. Robert H. Felix. After years of experience with this I simply wish to take the chance to say that I believe this was a brilliant concept that has worked extremely successfully for the benefit of the over-all work of the APA.

Wilfred Bloomberg, M.D.,
Chairman.

AS YOU LIKE IT

It is honor enough to be read and studied, even if only to be combatted ; and I send my critics back to their respective camps with my blessing, hoping that the world may prove staunch and beautiful to them, pictured in their own terms.

—SANTAYANA

WHAT LIVES ON

Immortality is a word that Hope through all the ages has been whispering to Love. The miracle of thought we cannot understand. The mystery of life and death we cannot comprehend. This chaos called world has never been explained. The golden bridge of life from gloom emerges, and on shadow rests. Beyond this we do not know—Fate is speechless, destiny is dumb, and the secret of the future has never yet been told. We love ; we wait ; we hope. The more we love, the more we fear—upon the tenderest heart the deepest shadows fall. All paths, whether filled with thorns or flowers, end here. Here success and failure are the same. The rag of wretchedness and the purple robe of power, all differences and distinction, lose in this democracy of death. Character survives ; goodness lives ; love is immortal.

—ROBERT C. INGERSOLL

NEWS AND NOTES

TRAINING IN PSYCHIATRY FOR PRACTITIONERS OF MEDICINE.—Philadelphia General Hospital has been approved by the National Institutes of Health, U. S. Department of Health, Education and Welfare for an annual grant for graduate training in psychiatry.

The grant allows for training general practitioners or other physicians in psychiatry, and is for a maximum \$12,000 a year. Interested physicians make dual application to both PGH and NIH.

Dr. James R. Harris, chief of psychiatry at PGH states that the NIH set up this type of grant to train practising physicians who wish to go into psychiatry, but cannot afford to make the change without compensation other than regular residency salary.

CONFERENCE ON NEUROPSYCHOPHARMACOLOGY.—This conference was held in New York City on November 12 and 13, 1960. Clinical psychiatrists, educators, researchers in basic sciences as well as clinical investigators participated. The Chairman of the conference was Paul H. Hoch, M.D., N. Y. State Commissioner of Mental Hygiene.

Among the recommendations was that a new society be formed, with the purpose of advancing knowledge in this important area of psychiatric research. An organizing committee was appointed, with Dr. Theodore Rothman of the University of Southern California School of Medicine as Chairman.

It is probable that the new society will be organized in time for the May meeting of the American Psychiatric Association.

PANEL DISCUSSION OF "DISTORTED COMMUNICATION."—This symptom in the psychoneurotic will be the subject of a panel discussion under the auspices of the Association for the Advancement of Psychoanalysis on Wednesday evening, February 15, 1961, 8:30 p.m. at the New York Academy of Medicine, 2 E. 103rd. St., New York City.

The speakers are Dr. Dominick A. Barbara, Dr. Martin Symonds, Dr. Robert L.

Sharoff, Dr. Joost A. Meerloo, Dr. Jack L. Rubins, Secretary of the Association will be the Panel Moderator.

TEACHING BEHAVIOURAL SCIENCES AT ALBANY MEDICAL COLLEGE.—An undergraduate teaching program in behavioural sciences has been established at the Albany Medical College of Union University as a sub-department of the college's department of psychiatry. Dr. Frederick D. McCandless, associate professor of psychiatry and former head of Albany Hospital's psychiatric outpatient clinic heads the new sub-department.

The course will be presented to students during their first 2 years of medical training, beginning September, 1961. Its purpose will be to integrate and expand teaching in such subjects as psychology, sociology and anthropology, especially in their application to the understanding of health problems; and thus enable future physicians to consider more fully the psychologic and sociologic aspects of their patients' illnesses.

EASTERN PSYCHIATRIC RESEARCH ASSOCIATION.—This Association will hold its 25th Scientific Meeting on Thursday, February 2, 1961 at 8:00 p.m. at the New York University Medical School, 30th St. and 1st Ave.

The speakers will be Anthony Sainz, M.D., Marcy, N. Y., Theodore R. Robie, East Orange, N. J., and William L. Holt, Jr., Albany, N. Y.

IV REUNION ANUAL DE LA SOCIEDAD DE NEUROCIRUGIA DE CHILE.—This Conference will take place on June 2 and 3, 1961, at Santiago, Chile under the presidency of Dr. Carlos Villavicencio.

The subject of the Conference will be "Tuberculosis of the Central Nervous System." All aspects of tuberculosis of the central organs in children and adults, including atypical forms and sequelae will be discussed by an outstanding group of speakers.

BOOK REVIEWS

THE CENTRAL NERVOUS SYSTEM AND BEHAVIOR. Transactions of the second conference, February 22, 23, 24 and 25, 1959. Edited by Mary A. B. Brazier. (New York: The Josiah Macy, Jr. Foundation. \$4.75.)

This volume is an excellent example of the product of a multi-disciplinary approach to a most complex subject. The limbic system constitutes the major consideration in this text.

Dr. Paul D. MacLean (National Institutes of Mental Health, Bethesda, Maryland) is responsible for the chapter relating the function of the limbic system to self-preservation, and preservation of the species. Dr. Endre Grastyan (University of Pécs, Pécs, Hungary) is responsible for the chapter on the hippocampus and higher nervous activity, and in approximately 80 pages, he discusses the part played by this portion of the central nervous system in conditioning mechanisms, memory and learning. The subject of "temporary connections" receives a thorough consideration. It would appear the conference suggested the functions of the limbic system involved preservation of the individual, preservation of the species, programming of activities and relating present activity to experience.

It might be of interest to those of us who have been primarily interested in the reticular system of the brain that in discussing the limbic system in this volume, a suggestion was made that the reticular system might be included as part of the "limbic" system.

Dr. Jan Bures (Academy of Sciences, Prague, Czechoslovakia) is responsible for the chapter on reversible decortication and behavior. In this chapter, "functional" as well as anatomical decortication is discussed, and the conditional reflex, depression and inhibition are considered.

Vladimir S. Rusinov (Academy of Sciences, Moscow, USSR) is responsible for the chapter on EEG studies in conditional reflex formation in man. Here again "temporary connections" and their site is a subject thoroughly considered, including the role of the cortex, sub-cortex, reticular formation, limbic system, thalamus, etc., in this function.

Dr. Brazier contributed the last chapter, reporting her impressions of the Colloquium on EEG and Higher Nervous Activity held in Moscow, USSR, October 6 to 11, 1958, in which Dr. Brazier covers the transactions by brief notes and adds her interesting descrip-

tions of the various Russian cities and institutes she visited in connection with this Colloquium.

This volume adds another significant building block to our knowledge of the relationship of behavior to central nervous system function. For those interested in this subject, this volume provides a wealth of information and stimulation. It will serve as another basic reference text in this field of investigation.

LORNE D. PROCTOR, M.D.,
Detroit, Mich.

EPIDEMIOLOGICAL METHODS IN THE STUDY OF MENTAL DISORDERS. By D. D. Reid. Public Health Papers 2. (Geneva, Switzerland: World Health Organization, 1960, pp. 79. \$1.00.)

Research in psychiatry has much to be thankful for to Dr. Reid for presenting this brief map of the concepts and techniques of epidemiology and its applications in the field of the mental illnesses. There are few ideas necessary for the design of productive studies which are not put forward here. The bibliography is highly selected to offer the reader more information on particular techniques or examples of the points made, thus avoiding loading the text with more than absolute essentials.

One of the useful chapters deals with the definition of the often misused terms, incidence and prevalence and with the variations in their meaning introduced by one or another adjective—"point," "period," "all-life," etc., adjectives too often left out when actually needed for true comprehension of the author's meaning. The basic considerations of population at risk and the opportunities and pitfalls of age standardization are well explained.

The book appropriately gives a great deal of attention to two highly critical points in all psychiatric epidemiology, the matter of sample selection and the problem of the selection of controls. The technique of cohort studies over relatively long periods is gone into rather thoroughly, together with the difficulties of the method.

Reid makes it very clear that the fundamental problem in the epidemiology of mental health and diseases lies in the old question, "What is a case?" It is unfortunate that the Leighton and Rennie studies were not available for consideration in relation to this issue—as well as others, throughout the book.

The World Health Organization, to which Dr. Reid was consultant for this study, published the volume. It represents another unit in what has thus far been a series of excellent publications in the field of psychiatry and mental health. This volume should be on the reference shelf of every experienced worker and on the desk and at hand for every beginner in the field.

PAUL V. LEMKAU, M.D.,
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The Johns Hopkins University,
Baltimore 5, Md.

THE SILENT LANGUAGE. By *Edward T. Hall.*
(Garden City, N. Y. : Doubleday and Co.,
Inc., 1959, pp. 240. \$3.95.)

THE SYMPTOM AS COMMUNICATION IN SCHIZOPHRENIA. Edited by *Kenneth L. Artiss.*
(New York : Grune and Stratton, 1959, pp.
233. \$6.00.)

Two fine new books on communication patterning call for attentive consideration by psychiatrists and other behavioral scientists. The first is written by an anthropologist with experience in the training of federal government employees for foreign service, a service in which mistakes and ineptitudes have provided material for a vigorously critical nonprofessional literature. Beginning with the observation that standards of behavior appropriate to one societal matrix may be completely misunderstood in another, Dr. Hall outlines an original theory of the nature of culture, treating it consistently as a form of communication. Ten "primary message systems" are described (interaction, association, subsistence, bisexuality, territoriality, temporality, learning, play, defense, and exploitation). The book is written in lucid style and is a fundamental contribution to the science. Its heuristic value is likely to be high.

Dr. Artiss edits the second book, a group study of schizophrenia from Walter Reed Army Institute of Research. The symptomatology of schizophrenia is seen as a communication device in the transactions between the patient and others. The schizophrenic is described as operating within a pattern of dilemmas—dependency preventing independence, omnipotent self-evaluation in the face of failure, hostility provoking retaliation, and avoidance provoking rejection. Within these dilemmas, the symptoms were useful and available reaction patterns "accomplishing" the rejection of the person from the family, from work groups, from the Army group, and from the ward population. The odd and different soldier, per-

forming poorly, unable to make friends and preoccupied with himself, replicated a series of negotiations proven by his past experience to lead to maximum comfort. He reassumed his unique and isolated position, and with the aid of those about him, confirmed his differentness and inability to perform. In hospital, the sought-for position of isolation and persecution could not easily be maintained in the face of very different group pressures. The ward culture sought to avoid a consensus of difference, to avoid relieving him of responsibility for poor performance and failure, to avoid further isolation from effective learning, to avoid confirming with him his non-need to learn. The fundamental function of the psychotic symptom—the avoidance of group status—was not allowed to operate. When the patient was able to "join" the patient or staff group, a reciprocal symptom loss followed. Parallel studies on the families of schizophrenics revealed an atmosphere of chronic, basic discontent. The intra-familial relationships were often improved by the hospitalization of the member in the "sick" role.

These books bring a measure of integration between the fields of information transmission, comparative cultural anthropology, education, and therapy. Both are models of methodology. They will give a refreshing redirection to the clinic worker and to the investigator.

THOMAS H. LEWIS, M.D.,
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Department of Psychiatry,
Bethesda, Md.

HANDBOOK OF SOCIAL GERONTOLOGY: SOCIETAL ASPECTS OF AGING. Edited by *Clark Tibbitts.* (University of Chicago Press, 1960, pp. 770. \$10.00.)

This important volume represents a first attempt to give form to a new field of research and knowledge—social gerontology. Social gerontology is concerned with (a) the phenomena of aging which are related to man as a member of the social group and of society, and (b) those phenomena which are relevant to aging in the nature and function of the social system or society itself. The contents are as follows: Clark Tibbitts, "Origin, Scope, and Fields of Social Gerontology"; Harry D. Sheldon, "The Changing Demographic Profile"; Leo W. Simmons, "Aging in Preindustrial Societies"; Fred Cottrell, "The Technological and Societal Basis of Aging"; Eugene A. Friedmann, "The Impact of Aging on the Social Structure"; Leonard Z. Breen, "The Aging Individual"; Eugene A. Confrey and Marcus S. Goldstein, "The Health Status of Aging People"; Margaret S. Gordon,

"Aging and Income Security"; Richard H. Williams, "Changing Status, Roles, and Relationships"; Fred Slavick and Seymour L. Wolfbein, "The Evolving Work-Life Pattern"; Wilma Donahue, Harold L. Orbach, and Otto Pollak, "Retirement: The Emerging Social Pattern"; Max Kaplan, "The Uses of Leisure"; Gordon F. Streib and Wayne E. Thompson, "The Older Person in a Family Context"; John W. McConnell, "Aging and the Economy"; George Rosen, "Health-Programs for an Aging Population"; Walter K. Vivrett, "Housing and Community Settings for Older People"; Fred Cottrell, "Governmental Functions and the Politics of Age"; Arnold M. Rose, "The Impact of Aging on Voluntary Associations"; Paul B. Maves, "Aging, Religion, and the Church." There are indexes of names and subject.

A fundamental volume.

ASHLEY MONTAGU, Ph.D.,
Princeton, N. J.

BIOCHEMISTRY OF HUMAN GENETICS. Ciba Foundation Symposium. Edited by G. E. W. Wolstenholme and C. M. O'Connor. (Boston: Little, Brown and Co., 1959, pp. 360, ill. 61. \$9.50.)

Of the 4 anniversary symposia sponsored by the Ciba Foundation in 1959 to mark its tenth year of successful promotion of "international cooperation in medical and chemical research" (London, Buenos Aires, Naples, Paris), that on human biochemical genetics at the University of Naples (May 13-16) was co-sponsored by the International Union of Biological Sciences and chaired by Montalenti. Focused on highly refined laboratory techniques for studying the biochemistry of gene action, the proceedings of this timely and well-organized conference provide an authoritative survey of the remarkable progress which in the analysis of human traits has been made in identifying "the direct line of causation from a genic structure, with known chromosomal location, to the corresponding, visible character." As Penrose emphasizes in the introduction, biochemical methods are now in the ascendant, while statistical arguments about exact Mendelian ratios have become less cogent.

In line with the selective policies of the sponsor, the conference was attended by a limited number of specialists in biochemical and cytological genetics (29 experts from 6 Western countries), with formal papers contributed by 14 of them. The subjects covered include galactosemia (Kalckar); defective sense perception (Kalmus); primaquine sensi-

tivity of erythrocytes (Childs and Zinkham); fetal and abnormal hemoglobins (Rossi-Fanelli, *et al.*, Itano, *et al.*, Hunt and Ingram); the synthesis of the haptoglobin system (Smithies and Connell), gamma globulin molecule (Grubb) and specific blood group substances (Morgan, Watkins, Ceppellini); and the genetic control of cholinesterase concentrations (Kalow) and plasma protein variants (Harris, *et al.*). Each section is followed by the transcript of an animated group discussion, thus aiming at presenting a well-rounded picture of the current state of knowledge in important frontier areas begging for the collaborative efforts of the biochemist, cytologist and geneticist.

The last part of the book deals with a panel discussion of technical problems encountered in bacterial genetics and modern tissue culture work (Luria, Cavalli-Sforza, Eagle, Lederberg, Pontecorvo). Of particular interest are the questions raised by Eagle regarding the immediate usefulness of observations derived from cultures of dispersed cells as distinguished from explant cultures of organized bits of tissues. While cultured cells show a remarkable degree of uniformity in their nutritional requirements, they tend to use their metabolic machinery for purposes of growth rather than the desired differentiation of specialized organ function.

As an age-specific growth record of a dynamically developing discipline with a bright future, this book will be of intrinsic merit and bibliographic interest for many years to come. It is carefully edited and upholds the fine standards set by publications of the parent organization. The only disappointing feature is the immoderate price difference between the English and American editions.

New York 32, N. Y.
FRANZ J. KALLMANN, M.D.

MENTAL HEALTH, THE NURSE AND THE PATIENT. By Doris M. Odlum. (Philadelphia: J. P. Lippincott Co., 1960, pp. 190.)

This book has been adapted by Miss Ethel Johns from the third edition of the book *Psychology, the Nurse and the Patient*.

The author deals with the psychological aspects of illness. The first few chapters deal simply and briefly with a general psychological approach.

The next chapters apply psychology more specifically to a number of situations which arise in nursing. These situations which Miss Odlum has chosen are practical and applicable in many areas. In this edition greater emphasis is placed on the patient outside of hospital.

In the last few chapters of the book there is a brief discussion of the psychoses and the psychoneuroses including methods of treatments. The role of the nurse in the care of the mentally ill patients is considered.

The book is short, easy to read and the illustrations generally are applicable to our situations. The presentation and choice of material at times appear uneven. The book would be a useful reference on an elementary

KATHLEEN KING,

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THE ANTECEDENTS OF MAN. By W E. Le Gros Clark. (Chicago : Quadrangle Books, 1960, pp. 374. \$6.00.)

Knowledge relating to the physical evolution in man has increased apace in recent years. In the present volume one of the soundest students and most lucid writers on man's evolution presents the facts which will lead the reader to a thorough understanding of the antecedents of that ornery creature, so prematurely named *Homo sapiens*. The book is excellently illustrated, and since the author is a leading neuroanatomist, his discussions of the evolution of the brain and special senses are particularly stimulating.

ASHLEY MONTAGU, PH.D.,
Princeton, N. J.

DREAMS AND PERSONALITY DYNAMICS. By Manfred F. DeMartino, M.A. (Springfield, Ill. : Charles C Thomas, 1959, pp. 377.)

This book is a compilation of 28 articles of theoretical, clinical, empirical, experimental and statistical nature, proposed to be of interest and value not only to students, psychological clinicians, and those who practice dream analysis, but also to academic psychologists. The editor hopes to stimulate interest in dream research to fill in gaps that are present in personality theory. The papers are selected from a period of American research from 1930 to 1958. Only one foreign paper is included, by Boss. All the papers have been previously published with the exception of one which is a doctoral dissertation. (One exceedingly valuable footnote in the book lists a number of unpublished masters' and doctoral theses on dream analysis.) Almost all of the papers have been abridged. Curiously enough a valuable feature for further study and research has been omitted, namely, the bibliographies at the end of each paper.

An editor must, from the vast literature on the subject, choose only a certain number of papers which he considers representative of the field ; therefore, a certain amount of arbitrariness enters into his selections. For what DeMartino intended for his book he has done rather well. Some outstanding papers are included : the excellent paper on "The Dreamer" by Gardner Murphy and Calvin S. Hall's "Cognitive Theory of Dreams."

I happen to find particularly interesting and informative Harry B. Weiss's "Oneirocritica Americana" on the 18th and 19th century American "Dream Books"; McCurdy's "History of Dream Theory" systematizing the approaches of ancients towards the study of dreams, a worthwhile elaboration of Freud's remarks about ancient dream interpretation. The editor's "Review of the Literature on Children's Dreams" is valuable.

Following the introduction is a section on empirical and statistical studies, including one chapter on "Nocturnal Sex Dreams" by Kinsey and his associates. Then follows a section on experimental and theoretical studies with papers by Irving Harris and Calvin Hall on anxiety dreams. The section on "Personality Correlates of Dreams" consists of 4 papers : Meer's "Authoritarian Attitudes in Dreams," Saul's and his associates' paper on the "Quantifications of Hostility in Dreams," Doust's "Studies in Physiology of Awareness" and Boss's "Psychopathology in Dreams in Schizophrenia and Organic Psychoses."

The section on methods of dream analysis is rather mixed. The paper by Hall on diagnosing personality by analysis of dreams is quite good especially because it contains a section on methods of validation. Of the host of papers in the last 30 years on dream analysis, why the one on the technique of dream analysis by Otto Kant was selected for publication is not altogether clear, since there are numerous papers more representative of recognized meaningful methods than the ideas presented by Kant's paper. This reviewer is still at a loss after several readings to understand what Kant means by saying that a "dream should be interpreted as little as possible, it should be read."

The section on the use of hypnosis includes the by now classical paper by Leslie H. Farber and Charles Fisher, and the excellent "Dreams and Hypnosis" by Margaret Brenman. The longest paper in this section is quite an abridged version of David B. Klein's study of 30 years ago on the experimental production of dreams during hypnosis. I suppose one of the values for the inclusion of this latter un-

imaginative work is that it is not too well known.

The last section reprints papers on dreams and projective techniques and on the physiological correlates of dreams, the latter containing the well known papers by Dement, Kleitman and Wolpert.

As one can note from the above, the book is eclectic and has therefore the advantages and disadvantages of such an approach. It is useful as a reference source, but might have been more so.

NORMAN REIDER, M.D.,
San Francisco, Calif.

PRACTICAL NEUROLOGICAL DIAGNOSIS. By R. Glen Spurling. (Springfield, Ill.: Charles C Thomas, pp. 284. \$6.75.)

The reviewer is hesitant to be critical of this little book written by a senior neurosurgeon. However, he believes many neurologists and many modern neurosurgeons would not consider it adequate nor sufficiently accurate for their students at any level. The adjective "practical" in the title of any book should not absolve the author from accuracy or from giving adequate detail of the subject under discussion. These points of criticism will be illustrated. Unfortunately, too, the style of writing is lacking in smoothness. The book does not make the clinical correlations with anatomy and physiology sufficiently clear nor does it outline a method of thinking through these correlations. The correlations come mainly in the form of dogmatic statements.

The "Cushing outline" of history and examination has much to commend it but it does emphasize localization at the expense of gathering facts, thinking of disturbed functions and then making interpretations of localization. Unfortunately, tradition and convenience have partly sustained this approach especially with reference to the study of cranial nerves. For example, doctors and students sometimes speak and actually think of facial weakness as something wrong with the 7th nerve even though the causative lesion is in the cortex or in the muscles. This book does not help to correct this erroneous approach. Another error in the outline is to list the sign of Romberg under cerebellar functions. This is a common error but a text should help to correct it. To use this sign in this way makes it meaningless. The methods of eliciting, as well as interpreting, reflexes are inadequately discussed.

In a book devoted to practical considerations one would expect the reader to be guided

quickly to an understanding of how to hear cranial bruits. Important features of auscultation are neglected and no mention is made of what one might call the best listening points over the head. The section on vision leaves much to be desired in every way. Good coloured pictures rather than drawings should be used as illustrations of papilledema. The chapter on lumbar puncture and spinal fluid does not outline the necessary detail which would guide a student either as to the examination of it or interpretation of the findings. Why does the author state that a lumbar puncture should not be done in the office? No mention is made of spinning down the red blood cells, when a bloody tap is obtained, before interpreting the appearance of the fluid. Why not say something of total protein in ventricular fluid as compared with that in the lumbar sac? The reviewer believes it would be wiser to omit the section than omit discussion of generally accepted points of importance in evaluating the study of spinal fluid.

The book is for students, interns and residents, but the reviewer does not believe it fulfills its designated purpose and believes the student and doctor will find more adequate information and more deductive methods of making correlations outlined in many of the standard texts of neurology.

ALAN A. BAILEY, M.D.,
Saskatoon, Sask.

OPERATIONAL VALUES IN PSYCHOTHERAPY. By Donald D. Glad, Ph.D. (New York: Oxford University Press, 1959.)

Despite its rather foreboding title, Dr. Glad has written a most understandable and eminently useful treatise. This volume represents more than a decade of work by Dr. Glad and a devoted coterie of students and associates. Its basic premise is that the psychotherapist's own personal value system will largely determine the "school" of psychotherapy he embraces, the operational procedures he pursues, and the type of therapeutic results he accomplishes. With this in mind, the author explores various aspects of Freudian, Sullivanian, Rankian and Rogerian therapy—as examples of current dynamic schools representing different value systems and different operational rules. The result is a critical second look at many of our cherished and unexplored faiths.

Many psychotherapists, particularly psychiatrists, will read this book with some dismay. It suggests that we may need to broaden our approach to understanding personality and

vary our techniques in psychotherapy from patient to patient. This work may bring to our attention a degree of professional short-sightedness and stir up anxieties and some animosities. The information presented is derived from controlled research and statistical analysis which at times makes difficult reading for the clinician. It may further cause some discomfort to the clinician in questioning the validity of using a single frame of reference in the diagnostic and psychotherapeutic approach to patients. The implications of this book are such as to shake one out of the security of using a single approach in dealing with patients and their emotional difficulties.

Dr. Glad's basic thesis suggests that the closer the patient's initial personality is to the goals of the therapist and the techniques of therapy derived therefrom, the sooner the patient can be expected to progress toward recovery with the latter refined in terms of the patient's achievement of the therapist's goals. Thus Dr. Glad suggests a need for shaping the therapist's theoretically derived method of treatment very early and very perceptively to the personality organization of the patient. This implies a need for careful psychiatric and psychological studies of each patient being considered for therapy and further underlines the need for a great deal of flexibility on the part of the therapist in the therapeutic techniques he applies. It further implies that the psychotherapist must have a broad background in clinical experience using different types of therapeutic approaches to different patients. This has many implications also from the standpoint of psychiatric education and would suggest the need in psychiatric training programs for a truly eclectic and broadly based approach to the teaching of psycho-dynamics and psychotherapy.

For the psychologist and psychiatrist particularly interested in research methodology, one will find the discussion of a technique for the study of change during therapy—a method that is as free as possible from a dependence, in the evaluation of the results of therapy, on our subjective, wish-fulfilling judgments which are so common in the literature today. Using this methodology Dr. Glad has very cogently illustrated and put to careful research test many of the hypotheses he has offered.

The basic thesis is both intriguing and promising and one that can only be worked out by further painstaking research, statistical analysis and follow-up. His readers will wish him the strength and stick-to-it-iveness to continue in this pioneer venture. Only through such works can psychotherapy be put into an

operational frame where it may be objectively studied. Every psychiatrist, psychologist, sociologist and clinician whose work brings them into the therapy field will do well to re-explore basic concepts with Dr. Glad.

FRANKLIN G. EBAUGH, M.D.,
Denver, Col.

NEUROPHARMACOLOGY. Edited by *Harold A. Abramson, M.D.* (New York City: Josiah Macy, Jr. Foundation, 1959, pp. 285. \$5.00.)

This is the transcript of the 4 discussions of the Fourth Josiah Macy Conference on Neuropharmacology held in September 1957. The verbatim style permits the reader to see the questions and doubts which arose in the mind of each participant but also records many sentences unfinished when someone interrupted, and deviations from the main topic. Considerable discussion is devoted to technical details of interest primarily to those attempting similar studies. Although there is no summary or conclusion and although one must read the entire text carefully to extract their ideas, these are quite valuable in furthering one's understanding of the biochemistry behind the actions of many psychopharmacologic products. Two short discussions deal with the effects of respiratory inhibitors upon Siamese fighting fish and the reactions of monkeys to electrical stimulation of various areas of the brain. The longer discussions deal with taraxein and its clinical effects and with the relationship between the chemical structure and physiologic action of various phenalkylamines and mescaline.

Taraxein is the name given by Heath to a labile substance found in the sera of schizophrenic patients which induce schizophrenic symptoms in normal individuals if administered rapidly by vein. Taraxein from a catatonic patient may induce paranoid symptoms as often as catatonic ones; which symptoms will appear in a given individual could not be predicted despite previous personality studies by as many as four psychiatrists. A spike discharge in the limbic areas was said to be constantly present in schizophrenics and "to accurately reflect the intensity of psychotic behavior." Taraxein was postulated to produce this action by altering the blood-brain barrier to permit normally occurring metabolites to gain entry into the brain cells resulting in both disordered electrical and psychic function. This postulate was not generally accepted and others had not been able to produce any effects by injections of taraxein. This most

interesting step in the search for a biochemical explanation of schizophrenia was left an open question pending further study.

Ceruloplasmin was mentioned frequently in both this discussion and in the last one as being involved in some fashion in mental disease. Its blood level is increased in any acute emotional state but is normal in chronic schizophrenics; it is increased by certain drugs but decreased by close analogues. Heath suggested it might act by metabolizing the excessive amines entering cells following alteration of membrane permeability (by taraxein) and reported some success in removing schizophrenic symptoms by its intravenous use. All agreed it acts as a phenol or catechol oxidase rather than attacking the C-N linkage as do the mono-amine oxidases but beyond that there was no general agreement.

The relations between the chemical structure and physiologic action of mescaline and phenalkylamines was discussed in great detail especially in relation to mono-amine oxidase. When this enzyme was inhibited, the metabolism shifted to an alternate pathway producing different degradation products which might induce alterations in physiologic and psychic responses. It is possible that the fact that a drug may act upon the peripheral nervous system to one degree and upon the central system to a different degree may be the result of the original drug or one metabolite acting at one site whereas another metabolite is active at the second site due to selectivity of the cells. Mullins theory is presented in which excitability of neurones is altered by changes in cell membrane permeability which will alter the passive flow of ions through the membrane and also the rate at which the cell pumps out excessive sodium. The drug molecule which most closely complements in size and spatial configuration the surface pattern of the cell will have the greatest potency. Small molecules fit crudely into many spaces and result in a very general action. Large molecules will find only few cells with the proper complementary surface configuration but will fit these most

accurately and will therefore be quite specific and selective in their action.

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ANATOMY: A REGIONAL STUDY OF HUMAN STRUCTURE. By Ernest Gardner, Donald F. Gray, and Ronan O'Rahilly. (Philadelphia: W. B. Saunders, pp. 999. \$15.00.)

This is a book on Gross Anatomy. It is directed to undergraduate medical and dental students, to provide information on living anatomy, and, by citation of relevant references, to meet the needs of the more advanced student and the postgraduate worker.

Introductory remarks include high lights on the History of Anatomy and guidance to anatomical literature and periodicals. Then come a hundred-odd pages on General Anatomy where consideration is given to the systems, to development and growth, and to radiological anatomy. Regional Anatomy occupies the following 845 pages; neuroanatomy, being a specialized field, is largely omitted. The concluding pages consists of an ample glossary of eponymous terms and a good index.

The illustrations, all in black and white, are numerous. In large measure they have been borrowed and re-drawn from contemporary sources and duly acknowledged. Some, perhaps, are rather bold and rugged, and some would have been more effective if it had not been necessary to reduce them to fit the available space—but, they fulfil their intended purpose. There are 64 good radiographic plates.

To write concisely both for the novice and for the research worker is a problem which the authors have largely overcome: in part by the use of large and small types, and in part by the profuse use of footnotes. The footnotes include derivations of words, definitions of terms, comments, documentary authority for statements in the text, and references to recent articles and to wider reading. Therein the book excels.

J. C. B. GRANT, M.D.,
University of Toronto.

DIAGNOSTIC AND DEMOGRAPHIC CHARACTERISTICS OF
PATIENTS SEEN IN OUTPATIENT PSYCHIATRIC CLINICS FOR
AN ENTIRE STATE (MARYLAND) : IMPLICATIONS FOR THE
PSYCHIATRIST AND THE MENTAL HEALTH PROGRAM
PLANNER¹

ANITA K. BAHN, Sc.D.,² CAROLINE A. CHANDLER, M.D.,³
AND LEON EISENBERG, M.D., F.A.P.A.⁴

This paper⁵ presents some of the findings of the first comprehensive study on the characteristics of psychiatric clinic outpatients of an entire State. Data were collected on the age, sex, color, place of residence, and mental disorder of every Maryland resident seen in a mental health clinic in the State or in nearby areas serving residents of the State during the year ending June 30, 1959. A mental health clinic was defined as "an administratively distinct psychiatric service for outpatients where a psychiatrist is in attendance at regularly scheduled hours and takes the medical responsibility for all the patients." It is our intention to demonstrate the usefulness to the psychiatrist, mental health program planner, sociologist and epidemiologist of such data obtained for an entire geographic area and therefore referable to a population base for computation of admission and termination rates.

The first point we wish to emphasize is that our data are not a description of the distribution of mental disorders in various population groups but rather of those receiving defined psychiatric services. The availability of various psychiatric facilities

and supporting services, clinic policies, cultural attitudes toward seeking and accepting psychiatric help, sophistication in recognizing psychiatric symptomatology, and community resources for case finding—all are selective factors determining who comes to clinics. As a result, the relation of the clinic population to the total mentally ill population is not known. For example, disturbed individuals seen by private psychiatrists, the Special Services Division of the Baltimore City Board of Education, probation services of the juvenile court, and social agencies are excluded. It has been estimated by various studies (1-3) that 10% or more of the non-institutionalized population are suffering from psychiatric disorders. Our figures, which indicate that less than one-half of 1% of the population are seen in a psychiatric clinic in a year, point to a large discrepancy between the total number who may be mentally ill and the number who are receiving outpatient services (4).

DEMOGRAPHIC CHARACTERISTICS

Table 1 compares the Maryland clinic admission rates for children and adults by place of residence and with national estimates. Rates adjusted for differences in the age distribution by place of residence were also computed. This adjustment modifies the figures in Table 1 slightly but does not affect the direction of the differences. Also we have estimated that rates based on number of individuals rather than on number of admissions would be approximately 5% lower for all groups.

In the more rural counties, clinic services are primarily for children while services for adults receive less emphasis. The relatively high rate for children in these counties reflects the use of the mental health clinic for

¹ Read at the 116th annual meeting of The American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

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⁵ This paper presents part of the findings of a methodological study of psychiatric clinic outpatients conducted by Dr. Bahn for the National Institute of Mental Health, Maryland State Department of Health, and the Johns Hopkins University School of Hygiene and Public Health. A monograph presenting detailed findings is in preparation.

TABLE 1

Admission Rates to Outpatient Psychiatric Clinics per 100,000 Population, by Major Age Group and Place of Residence: Maryland Residents, July 1, 1958 to June 30, 1959, and Estimated United States Total 1955

PLACE OF RESIDENCE	TOTAL	PATIENTS	PATIENTS
		UNDER 18 YEARS OF AGE	18 YEARS OF AGE AND OVER
Total Mary- land, 1958-59	285	292	280
Baltimore City	405	266	473
Metropolitan counties	220	258	197
Nonmetropolitan counties	230	386	141
United States (estimate) *			
1955	164	248	120

* Based on Bahn, A. K. and Norman, V. B.: First National Report on Patients of Mental Health Clinics, Public Health Rep. 74: 943-956, November 1959.

school psychological services and as a case-work and court diagnostic facility because of the lack of other community resources. If the special school services in Baltimore City were included in our statistics, the clinic admission rate for Baltimore City children would be more than tripled. The clinic data on rates of admission therefore indicate that where school systems lack testing facilities and where ancillary agency services are minimal, mental hygiene clinics tend to be dominated by service demands for psychological testing of children and social services. The uniformity, however, with which all clinics report long waiting lists for treatment of children indicates a marked inadequacy of services in all geographic areas.

The decrease in adult psychiatric rates from the more to the less urbanized area demonstrated in Table 1 for outpatients is similar to earlier findings which indicate that highest rates of hospitalization for schizophrenia occur in areas of high population mobility and density (5-7). The extent to which this gradient reflects differences in available services or differences in ecology (and in turn, ecological factors may represent cause or effect) is not known. There can be little doubt, however, that it reflects in part a deficiency of services for adults in the rural counties. Medical school and state mental hospital clinics are located in the large urban centers and are therefore rela-

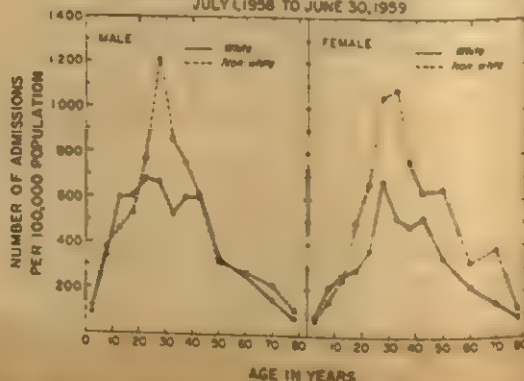
tively inaccessible to rural residents. In order to improve services to the rural post-hospitalized patient, a system of referrals from state mental hospitals to county mental hygiene clinics and health departments is now being initiated.

Within Baltimore City, rates for nonwhites for some age groups in early adulthood are almost twice as high as those for whites (Figure 1), this large difference by color paralleling the rates of first admission to the state mental hospitals of Maryland (8), Ohio (9), and New York (10). Our findings are contrary, however, to those of the Baltimore Chronic Illness Survey (1) of a sample of the general population. The authors cite examination by white clinicians, differences in age distribution, and selective factors of hospitalization, as possible reasons for the low prevalence of certain mental disorders found for nonwhites. Differences in the methods of the two studies must also be considered: in the Baltimore Survey a sample of the general population was examined by internists whereas the present study is based upon people with psychiatric complaints who presented themselves at a clinic. Our data, indicating differences between whites and nonwhites, emphasize the need to explore the relation of such factors as socioeconomic level and differential migration (into and out of the city) to psychiatric illnesses, as well as the need to investigate differential utilization of facilities by whites and nonwhites.

Another significant finding is that clinic admission and termination rates are con-

FIGURE 1

ADMISSION RATES TO OUTPATIENT PSYCHIATRIC CLINICS, BALTIMORE CITY RESIDENTS BY AGE, COLOR AND SEX, JULY 1, 1958 TO JUNE 30, 1959



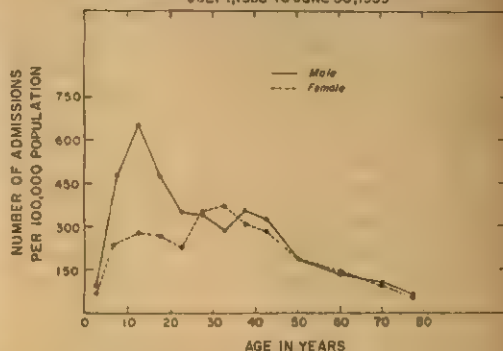
siderably higher for boys than girls. This finding has been observed in national statistics (11). We note here, in addition, the sex differential by diagnostic category—higher rates are observed for personality disorders, adjustment reactions, brain syndromes, and mental deficiency (Table 2). More boys than girls are admitted to nearly every clinic reporting to the study. In addition, more boys than girls are referred by almost every type of community agency. These data may reflect different and more obtrusive behavior deviations in males resulting in greater community intolerance, or more parental concern for boys; however, the higher morbidity rate among male children is well documented in other handicapping conditions also (12), and mortality in utero is higher for males (13). This suggests the need for intensive research into possible causes of these differences.

Interestingly, by about age 30, white female rates are as high as male and thereafter they are not dissimilar (Figure 2); among nonwhites, rates are higher for females than males at older ages (see Figure 1). First admission rates to mental hospitals, however, including private and public hospital data, and estimates for Veterans Administration hospitals, are somewhat higher for males than females (14).

Children under 5 and adults 65 years and over have the lowest rates of admission to clinics; high rates for school children are followed by a decline in late adolescence, a secondary rise at ages 30 to 40 years, fol-

FIGURE 2

ADMISSION RATES TO OUTPATIENT PSYCHIATRIC CLINICS,
MARYLAND WHITE RESIDENTS BY AGE AND SEX,
JULY 1, 1958 TO JUNE 30, 1959



lowed by another decline. Low rates for children under 5 years may be the result of a low prevalence of disorders, difficulty in detecting pathology, or reluctance to refer young children for psychiatric help. This is an area in which further knowledge is needed for control of mental illness. The data suggest, however, that case finding should be intensified. A pilot project in early case finding among preschool children has been initiated in well-baby clinics in Maryland. Infants and preschool children showing deviations in development and behavior are being referred for psychological evaluation.

The decline in clinic admissions at the end of adolescence appears to reflect the withdrawal of the school as the principal referral agent. Possibly, also, this is a period

TABLE 2

Termination Rates from Outpatient Psychiatric Clinics per 100,000 Population: Maryland Residents under 18
Years of Age, by Color and Sex, and by Mental Disorder, July 1, 1958 to June 30, 1959

MENTAL DISORDER	TOTAL	WHITE		NONWHITE	
		MALE	FEMALE	MALE	FEMALE
Total	269.2	366.1	189.0	285.1	159.9
Brain syndromes	38.4	43.4	27.1	68.0	34.6
Mental deficiency	44.3	52.1	36.9	57.8	27.5
Psychotic disorders	12.5	15.5	7.2	16.2	17.3
Psychophysiologic autonomic and visceral disorders	4.6	5.3	4.1	4.1	4.1
Psychoneurotic disorders	26.2	29.7	25.9	15.2	22.4
Personality disorders	57.9	95.3	29.5	55.8	14.3
Transient situational personality disorders	64.7	95.1	45.3	44.6	31.6
Without mental disorder	10.9	16.5	6.2	11.2	6.1
Not stated	9.8	13.3	7.4	12.2	2.0

of relatively low stress, coming after a period of academic demands and prior to the onset of family responsibilities. The marked change in rate of referral at the point that school attendance diminishes, nevertheless, emphasizes the importance of the school as a case finding agency for preventive psychiatry.

The increase in admission rates at ages 25-35 for white females and 30-40 for white males suggests areas for sociological investigation. For example, preliminary findings indicate that these ages coincide with the peak age of divorce after two or more marriages (15). Studies by Clausen(16) indicate the disruption of the marital relationship antecedent to hospitalization for mental illness, and those by Locke, *et. al.*(9), that rates of admission to public mental hospitals are highest for the separated and divorced. Information on the differential risk of admission to clinics by marital status is being planned for 1960 when denominator (census) data will be available.

The general decline in the clinic population past the age of 40 cannot be construed as an indication of diminishing mental pathology with age since it is accompanied by an increase in the rate of admission to inpatient care(11). The advent of new treatment methods, the declining resident mental hospital population(17, 18), and the growth of clinic services(19) can be expected to alter the present high ratio of inpatients to outpatients at these ages. The particularly low rates of admission to clinics for those 65 years and over concomitant with high rates of inpatient admissions, suggest that mental health clinics are not assuming a sufficiently important role in the care of geriatric patients. It is possible that intervention by a mental hygiene clinic could reduce the hospitalization rate for this group.

MENTAL DISORDERS AND SYMPTOMS

An important methodological contribution of this study, we believe, is that an impression of mental disorder was requested if a formal diagnosis could not be recorded. Clinic cooperation with this reporting procedure reduced the percentage of clinic patients, particularly children, with psychiatric classification not stated, from the national

average of 22%(11) to a low of 2% in the present study. The reporting and coding process permits separate study of diagnoses and impressions. Twenty-two percent of the children's classifications and 4% of the adults' classifications were impressions (Table 3). The proportion of children's cases reported as impressions is highest for mental deficiency and lowest for psychotic disorders. In this paper, impressions have been included with diagnoses in the rate computations in order to describe the patients as completely as possible. Data were tabulated on the broad and detailed categories of mental disorders, on severity of mental deficiency, and on selected symptom syndromes, to test the usefulness of the detailed diagnostic codes of the Diagnostic and Statistical Manual of the American Psychiatric Association(20). Only highlights of the findings are presented here.

We might look first at the age trend in the rates for each major category of mental disorder. Since mental disorder is reported only on termination of clinic services, the rates represent the number of clinic terminations per 100,000 population. As reported by clinics, the age curve for brain syndromes (Figure 3) tends to show three peaks, reflecting several different types of disease entities. Brain syndromes associated with prenatal and paranatal factors such as congenital cranial anomaly, mongolism, birth trauma, convulsive disorder, and unknown organic etiologies peak at early ages and generally continue at about the same level through age 15 years. Only convulsive disorder and other brain trauma do not decline rapidly thereafter. Except for white females,

FIGURE 3

BRAIN SYNDROME RATE OF TERMINATION FROM OUTPATIENT PSYCHIATRIC CLINICS, BALTIMORE CITY NON-WHITE MALES, BY AGE, JULY 1, 1958 TO JUNE 30, 1959

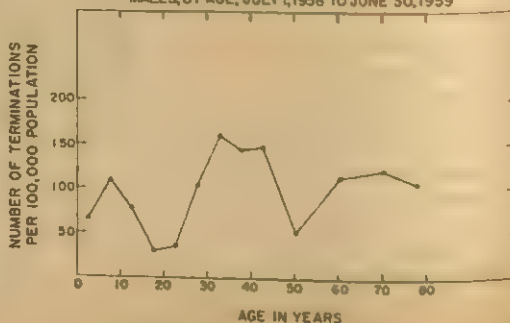


TABLE 3

Percent of Psychiatric Classifications Reported as Impressions, by Psychiatric Classification and Major Age Group: Maryland Resident Terminations from Outpatient Psychiatric Clinics, July 1, 1958 to June 30, 1959

PSYCHIATRIC CLASSIFICATION	PATIENTS UNDER 18 YEARS OF AGE		PATIENTS 18 YEARS OF AGE AND OVER	
	NUMBER OF CASES	PERCENT REPORTED AS IMPRESSIONS	NUMBER OF CASES	PERCENT REPORTED AS IMPRESSIONS
Total patients with a psychiatric classification	2,728	21.7	4,509	4.0
Brain syndromes	404	11.5	424	2.8
Mental deficiency	466	36.1	127	7.9
Psychotic disorders	131	5.3	1,521	1.6
Psychophysiologic autonomic and visceral disorders	48	8.3	83	1.2
Psychoneurotic disorders	275	9.5	1,314	2.6
Personality disorders	609	21.3	888	9.5
Transient situational personality disorders	680	18.2	71	19.7
Without mental disorder	115	40.0	81	2.5

acute and chronic brain syndromes associated with alcohol intoxication are the principal components of the rates between the ages 25 to 64 years. In late adult life, brain syndromes associated with cerebral arteriosclerosis and senile or presenile brain disease are predominant; although based on small numbers of cases the higher non-white than white rates parallel the racial difference in the death rate from cerebrovascular accidents(21).

Mental deficiency without demonstrated organic cause is diagnosed in clinics primarily at school ages (5-14 years). At these ages it is more frequently reported than brain syndrome with mental deficiency (Table 4). The distinction between idiopathic and organic mental deficiency, however, is dependent almost entirely on the adequacy of diagnostic procedures and med-

ical history. Children seen by a psychiatrist in our study are more likely to be classified with a brain syndrome than children seen only by a clinical psychologist. It is possible that this difference represents case selection rather than variation in case evaluation by profession. However, it is our belief that rates for organic mental deficiency are understated primarily because complete diagnostic service is frequently not available to the mentally deficient child.

The relatively high clinic rate for brain syndrome and other mental retardation combined noted for young children support the assertion that primary prevention of mental illness should begin with high quality prenatal and early natal care(22-24).

Psychotic disorders are rare below the age of 5; the rate rises exponentially in early adolescence (Figure 4) doubling in each

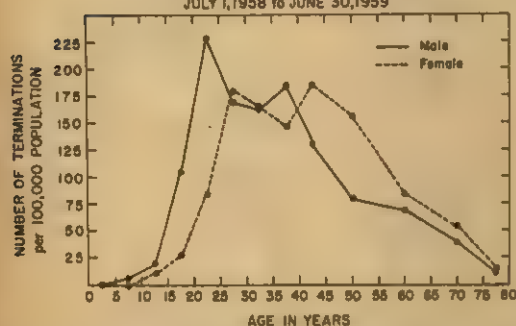
TABLE 4

Termination Rates from Outpatient Psychiatric Clinics per 100,000 Population: Maryland Residents under 20 Years of Age with Symptom of Mental Deficiency, by Mental Disorder and Age, July 1, 1958 to June 30, 1959

MENTAL DISORDER	TOTAL	AGE GROUP			
		0-4 YEARS	5-9 YEARS	10-14 YEARS	15-19 YEARS
Total rate for symptom of mental deficiency	62.8	42.1	89.5	76.4	41.0
Mental deficiency (idiopathic or familial)	43.1	17.4	65.0	59.1	35.3
Chronic brain syndrome with mental deficiency	19.7	24.8	24.4	17.3	5.7

FIGURE 4

PSYCHOTIC DISORDER RATE OF TERMINATION FROM
OUTPATIENT PSYCHIATRIC CLINICS, BALTIMORE CITY,
WHITE RESIDENTS BY AGE AND SEX,
JULY 1, 1958 to JUNE 30, 1959



subsequent 5-year age group to young adulthood and then begins to decline. The age curve for females is of the same general shape as that for males, but tends to be "displaced" about 5 to 10 years later on the age scale. This earlier peak in the male psychotic disorder rate has been noted in hospital studies (6, 25).

The psychoneurotic disorder rate rises somewhat earlier; for males the increment slackens in late adolescence so that adult female rates exceed male rates particularly among nonwhites. These disorders peak in early adulthood.

Adult psychotic disorder rates are almost twice as high for nonwhites as for whites (Table 5). For nonwhite females, psychoneurotic disorder rates are also relatively high. The fact that nonwhite male rates

markedly exceed white male rates only for psychotic disorders raises interesting questions: is there selection in the kinds of referrals made to clinics, different diagnostic interpretations for each racial group, or are these real population differences in the relative frequency of various psychiatric illnesses?

As a group, personality disorders show the greatest difference by sex (Figure 5). In general during childhood, male rates are about three times as high as those for females and in adulthood they are about twice as high with some tendency for the female rate to peak at a later age than for males. Personality disorder rates generally decline by the age of 20 or 25 but some increase occurs around age 40 for whites due to alcoholism (addiction). (It is noteworthy that only 11 outpatients with drug addiction were reported.) The change in rates for personality disorders, with age, are provocative. What happens in adult years to individuals reported with personality disorders at younger ages? Do these persons appear instead in other "problem populations" such as in welfare or agency case-loads? Have the disorders changed to some other type such as psychotic disorders, or are individuals with personality disorders "immature" persons who eventually mature as suggested by studies of Glueck on criminals (26)?

The most striking feature about transient situational personality disorders (adjustment

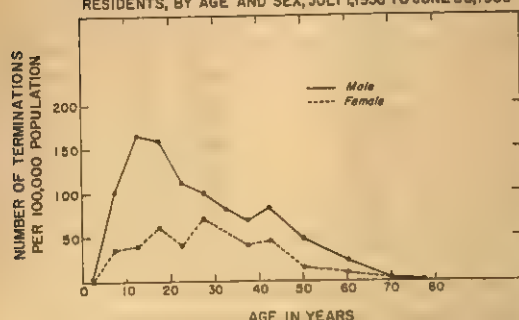
TABLE 5

Termination Rates from Outpatient Psychiatric Clinics per 100,000 Population: Maryland Residents 18 Years of Age and Over, by Mental Disorder, Sex and Color, July 1, 1958 to June 30, 1959

MENTAL DISORDER	TOTAL	MALE		FEMALE	
		WHITE	NONWHITE	WHITE	NONWHITE
Total	243.3	216.0	402.1	206.2	452.2
Brain syndromes	22.6	19.1	75.5	10.4	60.8
Mental deficiency	6.8	5.2	16.5	4.7	17.7
Psychotic disorders	81.1	61.5	145.3	73.3	169.6
Psychophysiologic autonomic and visceral disorders	4.4	4.2	4.3	3.5	11.3
Psychoneurotic disorders	70.0	54.5	63.3	73.1	143.4
Personality disorders	47.3	61.7	71.2	32.8	30.4
Transient situational personality disorders	3.8	3.8	2.9	3.6	5.7
Without mental disorder	4.3	3.6	12.2	3.4	5.7
Not stated	3.0	2.3	10.8	1.4	7.8

FIGURE 5

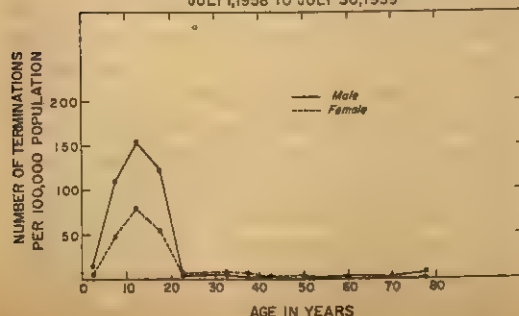
PERSONALITY DISORDER RATE OF TERMINATION FROM
OUTPATIENT PSYCHIATRIC CLINICS, MARYLAND WHITE
RESIDENTS, BY AGE AND SEX, JULY 1, 1958 TO JUNE 30, 1959



reactions) is their considerable numeric importance in childhood and abrupt decline at 18 years (Figure 6). Since there is no similar marked decline in other disorders, the phenomenon may be that referred to earlier—the sharp drop in school referrals—coupled with removal of relatively healthy young males from the general population by the armed forces. Another factor, we believe, is that many clinicians are reluctant in their diagnoses of children to consider the pathology as other than transient. From examination of clinic records we have noted cases diagnosed under the classification of “transient situational personality disorder” where the disturbance was neither transient nor situational but rather severe and prolonged. In a study of 80 pediatric outpatients of a psychiatric clinic, for example, all were found to have had symptomatology for at least 6 months, and half for at least 2 years (27). In addition, a serious deficiency in the nomenclature is the lack of a detailed classi-

FIGURE 6

TRANSIENT SITUATIONAL PERSONALITY DISORDER RATE
OF TERMINATION FROM OUTPATIENT PSYCHIATRIC
CLINICS, MARYLAND WHITE RESIDENTS, BY AGE AND SEX,
JULY 1, 1958 TO JULY 30, 1959



fication within this rubric (adjustment reactions) which is quantitatively so important for child patients.

Psychophysiologic autonomic and visceral disorders constitute a numerically unimportant category (about 2%) among clinic patients, an interesting contrast to the findings of the Baltimore Chronic Illness Survey of a sample of the general population(1). In the latter study, a third of all psychiatric cases diagnosed by internists were classified with this disorder. Either this reflects a difference between the types of diagnoses made by psychiatrists and by internists, or, as we are inclined to believe, a relatively small proportion of persons with psychosomatic illnesses are referred to psychiatric clinics.

In addition to mental retardation discussed earlier, the prevalence of certain other manifestations of mental illness are of interest irrespective of psychiatric classification. Clinics were requested to report the symptom of “excessive drinking” in order to provide an estimate of the extent of this problem among the patient population. Patients with brain syndromes associated with alcohol intoxication or with the disorder of alcoholism (addiction) represent less than half of the adults 20 years of age and over reported as problem drinkers (Table 6). A total of 25% of male patients and 9% of female patients are reported with this symptom. These are minimum estimates since for another 20% of males and 10% of females this information is not available. Information on problem drinking is an aid not only in individual prognosis, but also in ecological studies on alcoholism, and in the planning of alcoholism control programs. We recommend, therefore, that this symptom be reported routinely.

In concluding this brief psychiatric description of clinic patients in Maryland, we wish to urge both: 1. Continued study to improve the standard psychiatric classification as we progress in knowledge of etiology and psychopathology, and 2. Intensive field studies to improve reliability and comparability in the use of current classifications. Although there are at present some deficiencies in both areas, as with other illnesses, progress can be made only by the persistent attempt to classify and count separate dis-

TABLE 6

Terminations from Outpatient Psychiatric Clinics: Maryland Residents 20 Years of Age and Over with Problem Drinking, by Sex, July 1, 1958 to June 30, 1959

MENTAL DISORDER	TOTAL	MALE	FEMALE
Total number with problem drinking	739	539	200
A. Brain syndromes associated with alcohol intoxication	152	105	47
B. Alcoholism (addiction)	152	115	37
C. Other mental disorders with symptom of excessive drinking	435	319	116
Problem drinkers as percent of total patients	16.8	25.4	8.8

ease entities. Although symptoms or manifestations of a disease are useful, the reporting of symptoms alone cannot advance knowledge without clinical synthesis of the symptoms in terms of etiology and pathology.

DISCUSSION

In this paper we have presented some of the principal findings with respect to the demographic and psychiatric characteristics of the residents of a state who are outpatients of mental health clinics. These data, when related to a population base, point to large differences in the differential risk of clinic admission by age, sex, race, and place of residence. It would be of interest to compare these data with other health and welfare data in order to detect significant relationships.

Fact gathering on demographic and diagnostic characteristics of patients is the first step in reviewing a mental hygiene program in order to plan for comprehensive services. It enables one to specify who is being served and in what way. Only then is it possible to determine whether the actual pattern of service corresponds to an optimal plan based upon best available public health information(28).

We wish to encourage clinic studies in other geographic areas with large urban-rural and white-nonwhite populations for comparison with our findings. With the growing trend toward psychiatric treatment in the community as contrasted with treatment in the hospital, records from outpatient psychiatric facilities will become increasingly important in the study of persons who are referred to or seek psychiatric care.

The combined inpatient-outpatient population is a less-selected portion of the total

mentally ill than either group alone. In addition, a serious flaw in the present study is the lack of follow-up information relating to the subsequent psychiatric experiences of patients. The fact that about a fifth of the patients are readmissions to the same clinic indicates that we are dealing with a group subject to recurrence of illness.

A cumulative psychiatric case register file is needed, therefore, to obtain a more complete picture of diagnosed mental illness, and to follow individuals longitudinally through these facilities to answer such questions as: What is the unduplicated count of individuals by age, sex, color, and diagnosis, who are admitted to, terminated from, or under the care of a psychiatric facility within the year? What proportion of individuals diagnosed for the first time in a psychiatric clinic are subsequently admitted to a psychiatric hospital within a specified time after clinic discharge? What is the subsequent psychiatric history of an individual following first significant release from a mental hospital? Is the number and composition of the psychiatric population seen in psychiatric facilities fairly constant from year to year, or are there substantial yearly increments and decrements?

It is our immediate plan in Maryland to set up a coordinated research file on the inpatient and outpatient psychiatric population(29) to answer the above questions, to provide minimum estimates of incidence and prevalence, to aid in the study of the results of psychiatric care, and to observe changes in an individual's diagnosis over time, not only as an aid in determining diagnostic reliability, but also to provide further information on the natural history of mental disorders. The feasibility of augmenting this research file with data from private psychia-

trists and from the non-psychiatric counseling center will be explored.

SUMMARY

This study demonstrates the feasibility and utility of the routine collection of diagnostic and demographic data from all psychiatric outpatient clinics serving residents of a defined geographic area. These data added to existing mental hospital figures and supplemented by reports from private practicing psychiatrists and community agencies not under a psychiatrist's direction will provide a more complete identification of the community's mental health problems, an important step toward the ecology of mental illness.

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DISCUSSION

ADDISON M. DUVAL, M.D. (Jefferson City, Mo.).—As a mental health program planner, I am very interested in using every available aid which may be helpful in our difficult assignment. I feel the authors of this report have

presented us with a specific additional method which will help to better identify the community's mental health needs.

In so stating, we should not be lulled into any sense of security about our total program, for this is but one aspect of the difficult estimate of psychiatric need which plagues the state program planner. Many additional yardsticks have been suggested, but none has been found to be entirely reliable. We have found that the use of mental health facilities in a state may be measured by the actual need for such facilities by mentally sick patients, but having said this, one is faced with the practical problem that one community refuses to use the facilities for reasons which are not even known to a second community. Such variant usability of the facilities may be based on prejudice, misinformation, financial ability or even religious antipathy for the hospital superintendent. Such things as the reputation of the hospital, its role and image in the community, and the attitude of the local press are also important.

There is reason to believe that there is little variation in the rate of psychosis from state to state. Yet the admission rate to state hospitals across America varies very widely. Missouri has the lowest state hospital admission rate of all the states—about 56 per 100,000 population. Yet the people of the state are not aware that there may be more psychotics in the Missouri community than in a state with 4 times our admission rate to its state hospitals. We also do not have enough outpatient clinics to serve the psychotics who presumably must be in the Missouri population. The practical question

arises : where are these people and why don't they come to our attention ?

Recent information points to the fact that short-term state hospital stay—with or without specific therapy—seems to reduce the chronicity of illness in days, months and years. Maybe our low admission rate (which in Missouri is not clearly understood) is another indication that generally we tend to hospitalize too many psychotic patients routinely—that if we would postpone such hospitalization for a time, it might actually be avoided entirely !

I have no specific quarrels with the authors of this paper. Their method adds another assist to the most complex decisions which face the mental health program planner, and for each of these we are most grateful. I would add a brief postscript to emphasize that (a) improved precision of psychiatric diagnosis would make this study more valuable, (b) the great need for follow-up studies of the case material presented as mentioned by the authors, and (c) to underscore and agree with the author's report that schools without test services will swamp the clinic staff with requests for psychological testing—often not indicated. In the same situation the school teacher will often wish to refer the aggressive boy and overlook the schizophrenic girl.

In my experience this can be almost entirely eliminated through an in-service psychiatric educational program for the teacher who can be taught to accurately estimate the seriousness of emotional disorders of children in her classroom.

THE AMSTERDAM MUNICIPAL PSYCHIATRIC SERVICE : A PSYCHIATRIC-SOCIOLOGICAL REVIEW ¹

PAUL V. LEMKAU, M.D., AND GUIDO M. CROCETTI, B.Sc.²

The personal experiences on which this report is based were obtained in the course of two visits to the Amsterdam Service.³ In the first of these visits the psychiatrist author spent 10 days with the service, attending conferences, interviewing physicians and nurses, visiting facilities, and making patient visits with both physicians and nurses. The second visit was a part of a month-long study of a number of community psychiatric services, both rural and urban, in the Netherlands by two sociologists experienced in research on medical services. They spent two weeks with the Amsterdam service in the manner already described but, profiting by the prior experience of the psychiatrist, with a better planned series of observations and with more clearly defined questions to be investigated. They interviewed a sample of personnel drawn from all levels of the service as well as key individuals from related agencies. These interviews were semistructured in nature and the Dutch and German languages as well as English were used. Many were recorded on tape in order to permit a more leisurely and detailed analysis. These interviews were obtained as privileged and confidential communications and are here quoted directly only where the respondent has already indicated a similar view in publications or intended the quotation for public information. In some instances material is summarized. Misinterpretation under such circumstances is, of course, possible and such as occurs is the responsibility of the authors.

The Municipal Psychiatric Services of Amsterdam are comprehensive in scope. Their resources and services reach pre-school children, children of school age, de-

fectives, emotionally disturbed and handicapped persons, adult psychotics in the community and in the psychiatric wards of the general hospitals. The non-hospitalized (including psychopaths and police cases), the psychotic prior to hospitalization, during hospitalization and after hospitalization, and geriatric patients are included.

Other health, medical and welfare services in the community and general social agencies frequently work with the municipal mental hygiene services. These services are, on the whole, well integrated and interlocking. There has been, through the years, a certain amount of movement of personnel from one branch to another, and there are frequent conferences between the various agencies. A network of formal and informal interpersonal relationships make communication easy and rapid. Throughout our sample of interviews, with one exception, the same general ideology regarding the service and its effectiveness, and attitudes towards it, prevailed among all levels of personnel in all branches of the service, with of course, some difference in degree of elaboration. The one exception is that of a more psychodynamically oriented psychiatrist who was deeply concerned with the lack of provision for the neurotic patients and the relative absence of resources for intensive psychotherapy.

Only one part of this essentially integrated and comprehensive service will be discussed here, but it is important to bear in mind throughout the discussion that this one aspect is only part of an interlocking, mutually-sustaining system of which any part has access to the resources of all the other parts.

The particular aspects we wish to discuss are termed by the service itself, in the shorthand of bureaucratic jargon, "the post-care program, the pre-care program, and the emergency program." These are not three distinct entities. They share the same administrative staff, headquarters, and personnel.

¹ Read at the 116th annual meeting of The American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

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This discussion will not include the conventional indices of program evaluation such as physician-patient ratio, nurse case-load or the statistics of visits and of patient movement. The intention is, rather, to discuss the ideology and attitudes, the practices and theoretic rationale, which appear to have important significance for the practice and development of social psychiatry.

The first program to be established was that for patients following psychiatric hospitalization, the post-care program. This program was the point of origin of much of the present system.

The way in which this system developed is probably significant for subsequent evolution of the psychiatric services in Amsterdam. In the Netherlands each community pays a *per diem* (per capita cost) for each resident of that community cared for in a mental hospital. At the inception of the program there were about 3,000 Amsterdam residents in Provincial and voluntary mental hospitals. This population was increasing at about 100 per year. This was a substantial and growing burden on the community already strained to recover from its very considerable losses in the War. The municipal authorities put a simple question to the municipal psychiatrists: "Could this population be reduced, or its rate of increase slowed?" It is important to note two things about this initiative, its origin and its motives. It originated in lay authority. Its major motive was economic, "How can we reduce costs?" Dr. Querido, the founder of the service, Dr. Gravesteyn, the present head of the service, and Dr. Piebenga, chief inspector for the Netherlands Hospitals, are all in agreement that economy was the major motive for the request. As Dr. Piebenga put it, "Economy was the mid-wife at the birth of the new program."

This is not to say that humanitarian and professional motives were completely absent. Amsterdam has a long history of providing adequate care for its mentally ill. But one of the main reasons for asking for change was an easily understood, reality-centered question and the goals implied were universally considered desirable. Given this origin and these motives, it is almost predictable that any reasonable answer would receive respectful consideration. The

implications of this for community-based psychiatric program planning are obvious.

The response to the question was empirical and quantitative. Querido visited the mental hospitals, establishing contacts, reading histories and examining patients. We will not dwell on skillful handling of the complicated interpersonal processes that were involved in establishing mutually friendly contacts and working relationships with hospital personnel. Suffice to say that the painstaking efforts of those days still show their fruit in the persistence of easy, flexible, mutually cooperative relationships as a new generation of professional leadership takes over. It should also be noted that one of the stated motives for cooperation on the part of hospital administration was as reality-centered as the motivation of the community. Hospitals were markedly overcrowded and understaffed. Anything that would reduce the resident population in a reasonable and humane manner would increase hospital effectiveness and provide a higher level of professional satisfaction.

Querido established that 10 to 20% of the resident mental hospital population from Amsterdam was being retained in hospital after having achieved maximum potential benefits from their stay, simply because of lack of alternative facilities to which they could be discharged. Querido visualized these alternative facilities as consisting of first, limited medical supervision and, second, housing to provide an adequate place for the discharged patient to live.

The question of medical supervision was met by providing for a combination of "office" (visits to headquarters) and home visits. Much has been said about the institution of psychiatric home visits in Amsterdam, but at this point we only wish to note that it was functionally realistic. If one accepts responsibility for the supervision of a psychotic patient in the community, then it follows that the failure of that patient to appear for a scheduled appointment is a cause for concern and action rather than for rejection. Thus, in such a program, home visits are imperative whatever the reason for the patient's inability to appear at an outpatient clinic or office. At present every patient is seen at home at least once by a psychiatrist. This is usually a screening

visit for admission to the service. He then, at the daily staff conference, prescribes the frequency of visits by the nurse-social worker which average once every two weeks per patient. She in turn may request additional psychiatric home visits if she feels the patient requires them but is unable, or cannot be relied on, to come to the office.

Housing was a very real problem. In Amsterdam, housing has perennially been in short supply. The city had suffered relatively heavy war damage and has had during the post-war years an especially acute housing problem. In fact, it was not until July of 1959 that the number of new houses started in Amsterdam exceeded the number of new families formed in the same period.

One need hardly comment on the inability of the psychotic patient, especially when hospitalized, to compete successfully for such a hard-to-get commodity. Querido's solution was to have the psychiatric service compete for the psychotic. He sought housing for the psychotic patients returning from hospital and for their families. This was done, and to this day in the allocation of new housing, the post-hospitalized psychotic patient is considered.

The development of two facets of the program have thus far been traced, home visitation and housing. There is a third: employment. Many patients potentially available for discharge from psychiatric hospital were capable of work. For some, work could be found in the sheltered workshops and training schools. Querido determined to place other patients in the open labor market. For this, recourse was had to the state employment service.

Work appears to have a special place in the Dutch culture. It is an integral part of the concept of a normal way of life and Querido in his social psychiatry ascribes to it a therapeutic function as well.

In this connection note must be taken of the general employment situation in the Netherlands. For some time there has been a "tight" labor market, with as many or more job opportunities as there are applicants. It has been estimated that among one million inhabitants of Amsterdam there were on the average in 1959, only 2,000 people seeking work but unplaced. It would be difficult to match this situation in the

United States even at high levels of employment.

Initially, an employment counsellor was assigned to the mental hygiene service on a part-time basis. Later, as the service developed and expanded, the same employment counsellor was assigned full time. Although drawing his pay from the employment service he works as an integral part of the post-hospital service. In the interview with him he reported an interesting change in attitude having taken place as his employment conditions changed. During the period of his part-time assignment he reports feelings of frustration and hostility that occurred when he had placed an individual in a job and when that same person—as occurred in many if not most cases—showed up again because he had left his job for some reason he, the counsellor, thought trivial and irresponsible, requesting a new placement and armed with a note from the psychiatrist or nurse requesting such. He explains that he felt that either he was failing in his work or that the psychiatrist or nurse was being "put-upon" by the patient, that they were very gullible not to protest what he considered overusage of services. He came to realize that he was measuring his performance against that of his colleagues who were dealing with a different population. Later, with full time assignment to the service, with increasing contact with personnel of the service and with growing insight, he re-defined his task in terms of different and more therapeutically oriented standards. The objective he now defines is not permanent placement, but keeping the patient employed as frequently and as long as possible. This not only has tangible monetary returns and is understandable to the entire community, but is also, in this work-centered society, a highly approved goal. On the other hand, this also means a further involvement of the community in the problem of its mentally ill, not in some socially or geographically distant hospital, but "on the job."

We thus have three elements of the service: medical supervision, housing, and work.

For various reasons, this program, originally designed to facilitate the discharge of patients from hospital, was extended to

those patients in the community who were awaiting hospitalization. Some of these patients had been diagnosed as needing hospitalization. Others were picked up by the service in its effort to screen out admissions that were essentially social problems and that could be dealt with in the community. Still others were referrals from physicians and from the police. This was termed the "pre-care" service. Again the motivations from the extension were clear and communicable and were considered highly desirable on the part of the community.

In the working of this extended service it was found possible to retain many patients who would formerly have been hospitalized in the community, utilizing the same pattern of services as already existed in the "post-care program." The acceptance of these patients meant the assumption of a much greater degree of management responsibility for them. In the post-care program, responsibility is to some extent shared with hospital personnel. In the "pre-care" program the entire responsibility falls on the community psychiatrist. In reality the acceptance of the responsibility appears to have been inevitable. Mental hospitals were crowded. Admissions were often delayed from 10 days to 2 weeks and more. Someone had to assume responsibility for the patients when there simply was no place to hospitalize them. The willingness to assume this responsibility developed out of the success in handling similar psychotic breaks occurring in discharged patients. There was a growing feeling of confidence. "The striking thing," said one psychiatrist, "is not the number of undesirable effects of a psychotic break, but the number of times nothing happens at all." One is struck by what seems, in contrast to American practice, the matter-of-fact way in which the psychiatrist in the Amsterdam service—or perhaps we should say the psychiatrist who survives in the Amsterdam service—handles a psychotic episode in the environment of a tenement or crowded apartment.

There is a final program to be discussed: the emergency service. When responsibility for all psychiatric admissions and for cases awaiting admission was assumed, it was recognized that the service was a 24-hour responsibility, that psychiatric emergencies

had to be handled whenever and wherever they occurred. Staff was put on a 24-hour basis so that at any time of the day or night an emergency could be acted on. Interestingly enough all psychiatrists interviewed reported this seemingly onerous part of their duties as an interesting and rewarding one.

Calls are accepted from the police, from physicians in the community, and, under some circumstances, from relatives or neighbors. Since facilities for hospitalization are limited, in almost all cases the psychiatrist on emergency duty attempts a temporary solution, pending the application of the full resources of the service. In well over 70% of the cases the emergency call does *not* result in hospitalization in connection with the episode. In many cases the emergency call concerns a patient already known to the service. It is interesting to notice that through the years the utilization of the emergency service has declined significantly in spite of an increase in the population of Amsterdam. In 1954 there were 1,419 emergency calls. In 1956 there were 411. All psychiatrists interviewed reported in their own clinical experience a lessening of psychotic violence of the sort as to create a psychiatric emergency. Whether this reflects a greater accessibility of psychiatric service or other factors is not clear.

All of this leads to a conception—a theoretic rationale—of social therapy which is generally shared throughout the service. It should be emphasized that this is not a conception which includes the neurotic patient. The general consensus of psychiatric opinion among those working in the service is that the service provides a very unhealthy milieu for the neurotic because it encourages dependency and exploitation. This is, rather, a service designed for those who can exist in the community with a productive amount of social function only if given a certain degree of protection and shelter. The purpose of such a service, according to Querido, "Is to erect a buffer between society and the patient." Within the shadow of this buffer, the patients remain in the community.

There are three elements to this "social therapy." First, there is the acceptance of a long-term management responsibility. This management is directive in nature, concerns

itself with the infinite detail of daily life and frequently acts to protect the patient from the consequences of his own behavior. An illustration of this management is the case of an elderly couple where the wife was psychotic. They had been planning a vacation that was considered most desirable in that it provided the blind diabetic husband with an annual respite. The couple were, however, declining the vacation because they would not take their pet parakeet along and were unable to find someone to care for it. In a matter of seconds the situation was resolved by the nurse-social worker who undertook the responsibility for the parakeet. Needless to say, she also checked supplies of medication, inspected vacation plans, examined the budget and generally assured herself that the planned vacation was feasible.

All this is quite in contrast to our more restricted practice of simply assisting the patient to work out his own problems. The aim here is not cure, but the goal is realistic management in terms of community life. The problem of management was described by a psychiatrist not as one of seeing what the nature of the illness is but "as seeing what the patient does with his illness in the sphere of reality" and, if necessary, mitigating the consequences of his illness so that he can continue to function in the realm of "community reality."

The second element of this conception of social therapy follows logically from the first—direct manipulation of the patients' social environment in order to minimize the consequences of the illness. This is not simply to protect the patient from reality, but also to protect the surrounding group. A psychotic youth may be removed from a household, temporarily or permanently, in order to relieve the parents. Termination of employment in a given situation may be advised. In short, the living of the psychotic is channeled into those areas where there is the least social and emotional cost to himself and to his group. Complaints of neighbors and employers are listened to sympathetically and often acted upon. Repetitions of strained situations are not defined as failures but simply as symptomatic of

the need for further manipulation. Lest an erroneous impression be gathered from the discussion of these two elements, it should be emphasized that the average length of stay on the service is about two years. In spite of these dependency creating notions, many patients learn to shift for themselves after a period of time.

The third element of the social therapy may be termed an ideological one. It is perhaps best expressed in sociological terms. The concept of the social institution is central to sociology. The early sociologists, however, had a great deal of trouble distinguishing their concept of "institution" from the popular concept which was that of a physical structure of brick-and-mortar—the orphanage, the hospital, the jail. The concept that the *sociologists* were expressing was one of the "institution" as a set of social practices, routines, patterns of social behavior. According to McIver, an "institution" is a "form of social procedure," in other words, an accepted pattern of behavior. What seems to have happened in Amsterdam is that a pattern of social behavior has been created which provides, for a segment of the population of psychotics, most of the protection usually provided by the brick-and-mortar institution of the popular conception.

The implications of this social institution invite research investigation. A most pressing question concerns the cost, in psychological terms, to the community of maintaining psychotic individuals in close proximity to developing personalities.

What are the implications of the way in which the Amsterdam program grew and developed? It is tempting to generalize and say that programs of community psychiatry are always best built upon the expressed needs of the community. Popular motivations ought, then, always to be accepted and utilized. Under such circumstances, perhaps community involvement to the extent of commitment of necessary resources is more likely. Perhaps these statements are true. But more research is needed before these propositions can be fully accepted.

INTRA AND EXTRAMURAL COMMUNITY PSYCHIATRY¹

MAXWELL JONES, M.D.²

A therapeutic community(1) is distinctive among other comparable treatment centers in the way the institution's total resources, both staff and patients, are self-consciously pooled in furthering treatment. This implies, above all, a change in the usual status of patients. In collaboration with the staff, they now become active participants in the therapy of other patients and in other aspects of the overall hospital work, in contrast to their relatively more passive, recipient role in conventional treatment regimes.

The social structure of a therapeutic community is characteristically different from the more traditional hospital ward. The term implies that the whole community of staff and patients is involved at least partly in treatment and administration. The extent to which this is practicable or desirable will depend on many variables, including the attitude of the leader and the other staff, the type of patients being treated, the sanctions afforded by higher authority, *etc.* The emphasis on free communication in and between both staff and patient groups and on permissive attitudes which encourage free expression of feeling imply a democratic equalitarian, rather than a traditional hierarchical, social organisation.

Staff and patient roles and role relationships are the subject of frequent examination and discussion. This is devised to increase the effectiveness of roles and sharpen the community's perception of them. Thus, it may be felt that a nurse's role is clarified and rendered more effective if she ceases to wear a uniform. It may take many months of study and discussion to decide that, say, a student nurse requires, on an average, 4 months on a ward before she feels secure enough to discard her uniform. To share this discussion with the patients is to increase their awareness of the difficul-

ties of a nursing role and may modify their relationship to the nurses. The aim is to achieve sufficient role flexibility so that the role at any one time reflects the expectations of behavior of both staff and patients collectively.

The examination and clarification of roles inevitably sharpens the role prescription but may at the same time lead to some role blurring. This is not contradictory, as much depends on the nature of the role relationships. Thus, it may seem appropriate that nurses as well as social workers should visit patients' homes. The former might accompany patients on home visits to help in the rehabilitation process to the outside world. The social worker might visit the home with the patient's approval but not in his presence. Her visit might be mainly to try and engage the family members in treatment which would be complementary to the patient's treatment in hospital.

The overall culture in a ward or psychiatric unit represents the accumulation through time of the attitudes, beliefs and behaviour patterns, common to a large part of the unit. This is arrived at as a result of considerable inquiry into the nature of these attitudes, *etc.*, and an attempt is made to modify them to meet the treatment needs of the patients. In this context the term "therapeutic culture" is, sometimes perhaps, hopefully used. The tendency is for these cultural patterns to be most clearly established in the more stable and permanent members of the community, *i.e.*, the staff.

Examples of such attitudes contributing to a therapeutic culture or treatment ideology would be an emphasis on active rehabilitation, as against "custodialism" and segregation; "democratization" in contrast to the old hierarchies and formalities of status differentiation; "permissiveness" in contrast to the stereotyped patterns of communication and behaviour; and "communism" as opposed to highly specialised therapeutic roles often limited to the doctor.

Hospitalization is only one aspect of treatment, and it is necessary to consider

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the extension of treatment into the outside community. The combined effect of physical treatments, including tranquilizers and social rehabilitation, has been to make many more psychotic patients well enough to return to at least a limited existence in the outside world. The degree of improvement in the remission rate in schizophrenia has not yet been fully assessed, but fairly comprehensive studies have been reported from both sides of the Atlantic. Brown(2) and his associates in London studying post-hospital adjustment in a group of 229 chronic patients found that 68% of these patients succeeded in remaining out of hospital for at least a year, and of these 66% were rated as showing either full or partial social adjustment. Successful outcome was associated with the patients' clinical state on discharge, with their subsequent employment, and with the social group to which they went: patients staying with siblings or in lodgings did better than those staying with parents, with wives, or in large hostels. Freeman and Simmons(3) in America studied psychotics discharged from hospitals and contrasted the outcome of those who returned to conjugal and to parental settings. They found that the wives have higher expectations of performance in relation to the recovered patient than do parents. The tendency to involve families in the treatment and management of their sick members in collaboration with psychiatrists is a current trend in all types of psychiatric illness. The day hospital is one example of this trend, and the much quoted experience at Worthing(4) in England was that during 1957 the anticipated admissions to the parent mental hospital at Graylingwell dropped by 56%, and in the following year by 62% compared with 1956. This means that many patients who in previous years would have presumably been admitted to hospital were now being cared for in the community on an outpatient day care basis.

One effect of this change is to put new kinds of stress on the community. The family are encouraged to keep "Grannie" at home and make do with psychiatric help as required. The general practitioner is more actively involved and by necessity is brought into much closer collaboration with the psychiatrist than previously. The local

health authorities have greater calls on their resources, and more extensive training in the psychiatric aspects of their work is becoming necessary for public health nurses and so on.

These changes have come about largely as a response to improved treatment methods in hospitals and a greater awareness of the needs of the patient in social rehabilitation. One could say that these changes have occurred largely within the past 10 years or even less. It is comparatively easy to change the culture of a hospital where the role of the doctor is preeminently that of a leader and the whole culture is or should be geared to therapy. This motivating force is a unifying factor to an extent that is impossible in the much more complex and extensive outside society. Patients have come to feel a new responsibility for their fellow patients and doctors have become interested in their patients as people, but have we any right to assume that the rapid change in the climate of opinion in hospitals will be matched by a correspondingly rapid change in opinion outside?

To start from the beginning, how well are we informed about public opinion in general towards mental illness? The National Opinion Research Center of the University of Chicago have carried out more than 3,500 interviews with a cross-section of American adults since 1950. Shirley Starr (5) reports that only 11% of the sample studied believe that a psychotic cannot get better again. On questions relating to recommending psychiatric facilities, the positive answers were generally better than 50%. When the respondent is asked what mental illness means to him, he generally distinguished between "nervous conditions" and "insanity" and included both as forms of mental illness. In effect, he agrees with the modern psychiatric distinction between psychoses and the personality disorders and includes both as forms of mental illness. In another context, however, when the respondent is not self-consciously giving a definition but is speaking spontaneously, he tends to slip into an identification of mental illness with psychosis only. He does not honor his earlier agreement that personality disorders are part of mental illness too.

Other studies have dealt with the prob-

lem of changing community attitudes towards mental health, but the results of such studies are conflicting (6, 7). It may be that we can, in time, achieve new skills in altering community attitudes towards mental illness, and here lies a whole area for future study. There is a possible analogy with the therapeutic community concept. In the latter, the nurses who once played a largely custodial role now, when personality factors and training permit, play an essentially therapeutic one. How far this pattern can repeat itself, now substituting family members for nurses and treating the patient in the home instead of in hospital, remains to be seen. In these two situations the psychiatrist should theoretically be equally competent. How far is this true in the current European or American scene? How competent is a psychiatrist or a social worker as currently trained to assess the nature and degree of disorganization within a family? To determine who really is the sick member or members? How willing is he either to change his role and operate in the patient's home milieu rather than in his office? The fact would seem to be that as yet there is no adequate training in social psychiatry.

It would seem that the idea of a mental hospital as such is becoming out-of-date. In Britain the new Mental Health Bill does away with the designated hospital and any hospital may now have psychiatric beds where patients may come and go without any formality whatsoever. In addition, commitment procedures which are now invoked in only 13.5% (8) of all admissions to mental hospitals will be still further simplified by requiring two medical certificates only and no legal involvement at all. However, review tribunals are available to any patient who may wish to dispute his commitment and the chairman of this tribunal will be a lawyer. Virtually all mental hospitals in Britain offer outpatient facilities to the areas which they serve,³ and psychiatric specialists make frequent domiciliary diagnostic visits to the patient in his home; 22,809 such visits were made in 1958. In progressive mental hospitals the medical staff may spend about half their time in

hospital and half their time in the extramural services. The hospital is already beginning to feel bypassed and nurses are asking for roles that are more community centered. The center of teaching, psychiatric assessment, and short term treatment is passing to the small diagnostic unit attached to the general hospital.⁴ The mental hospitals will probably tend to become long stay annexes and one is presented with the rather tragic anomaly that the very people who have given so much to the progressive aspects of British psychiatry may find themselves relegated to a relatively unimportant role. However, this is probably more a symptom of reaction to change than a reality, and the vitality that produced the change will probably achieve a solution, *e.g.*, the long stay annexes may well become something very different to even our present concept of a mental hospital. Given patients who as a group will, in most cases, be capable of only a marginal adjustment in outside society, if at all, then what sort of social organization should be evolved to give them the optimal social conditions compatible with their mental state? It is possible that something more like a village settlement than a hospital will emerge. Already several mental hospitals have demonstrated the feasibility of employing even disturbed and hallucinated schizophrenic patients on paid production work in a hospital factory doing contract work for outside firms (9, 10). Such a functional role has been shown to improve the social adjustment of such long stay patients and demonstrates that they are capable of working harmoniously with ordinary people (11). At Embreeville State Hospital in Pennsylvania and Mapperley Hospital in Nottingham, England, some long stay patients look after their own wards. In Southern Nigeria, Doctor T. A. Lambo has found that the new mental hospital built by the British is feared by the local inhabitants who view a hospital as a place where people go to die. Not having had mental hospitals in the past, they were unaffected by the custodial excesses which we associate with mental hospitals in the West during the past hundred years. Taking the local village culture into

³ There are more than 500 psychiatric outpatient clinics for adults in England and Wales.

⁴ There are some 43 psychiatric clinics attached to general hospitals in England and Wales (1958).

account he felt that the patients would be happier and get better sooner if they lived in familiar surroundings. He found a village which was prepared to absorb mental patients and their families. This has proved to be so successful that two other village settlements have been started. This experience has much in common with the centuries-old family treatment program in Geel, Belgium. These various examples point the way to social organizations for the treatment of mental patients quite different to the mental hospital as we have conceived it in the past.

In brief, it seems that a social revolution has started in psychiatry, and no one can yet foretell where it will lead us. It seems certain that the mental hospital will change fundamentally. It will probably become much smaller or, as a compromise, the large hospital will break down into several smaller semi-autonomous units(12). The social structure of the future hospital may well change in the direction of more ordinary "village settlements" with their own factories, the maximum possible range of role playing opportunities, and a large degree of self determination. Along with this may well go a radical change in medical and staff roles generally. The center of gravity of psychiatric endeavor may well move from the state hospital to the small assessment teaching and treatment unit in the general hospital, with a concurrent development of much more active community services and greater involvement of the general practitioner and local social service agencies. Titmuss(13) has warned us against over

optimism regarding economy when home treatment is compared with hospital treatment. Nor do we know how communities will react to the role for which they are being cast by psychiatric theorists. We need to know much more about community attitudes to mental health and how, if possible, to modify these in ways favorable to the betterment of mental health(14).

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A COMPARISON OF RESULTS OF CONTROLLED DRUG EVALUATIONS IN TWO STATE HOSPITALS

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The need for an effective treatment for the chronically mentally ill continues; and it is fortunate that potentially beneficial compounds are becoming increasingly available. A method of rapidly determining which of these new compounds are of value and which should be discarded is also a continuing need. This report describes such a method of evaluation and a comparison to test the validity of the procedure followed.⁴

MINIMAL REQUIREMENTS IN DRUG EVALUATION STUDIES

If the changes observed during the course of a study are to be attributed to the compound being evaluated, certain significant variables must be considered, and insofar as is practical, controlled. These variables include the selection of a group homogeneous as to duration of hospitalization, characteristic behavior and age. The hospital environment that was in effect before the project was initiated should be continued with a minimal increase in attention, contact with new personnel or other interruption of the patient's previous routine.

In addition to these controls, a standardized method of reporting behavioral change is required. These reports should include detailed observations by trained staff as well as the daily impressions of the ward personnel.

The types of patients to be tested and the personnel available must be considered in selecting a method of reporting behavioral change. For instance, psychological tests which require the patients' participation and sustained interest are of little value in evaluating chronic patients. Involved

rating scales with complex instructions may be meaningless to the aide; and the validity of the data collected is hardly increased by the aide's marking his confusion with a 4 plus or a 1 plus.

Unfortunately, there are a great many more psychological tests available for measuring behavioral change than there are psychologists to administer them in most chronic mental hospitals. These psychologists who are available, are not always interested in repeatedly testing large groups of chronic patients.

Whatever system for recording behavioral change is evolved should include observations made by more than one individual at different periods during the day. Since if significant improvement or side effects occur, they should be sustained sufficiently to be obvious to more than one observer.

If groups homogeneous for the factors described are chosen and if a method of measuring improvement or side effects is used which is understandable to the available personnel and capable of reflecting significant change in behavior, then comparable results should be obtained in hospitals with similar patient populations.

The following is a report on the comparison of the results obtained using such a system(1).

METHOD

The following request for a drug study was sent to the psychiatric nurses in charge of the research units in two state hospitals:

Patient Group:

Number: 25 to 35

Duration of hospitalization: 1 year or over

Sex: Male and female

Age: 25 to 65

Diagnosis: Not important but patient should have history of disturbed behavior.

Length of study: 8 weeks

Evaluation: Detailed control evaluation; to be repeated at end of 4th week and 8th week. Weekly progress notes(2).

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Laboratory tests: Complete blood counts and urinalyses weekly.

Compounds to be tested: Stelazine (trifluoperazine) Vontil (N-N-dimethyl-10(3-(1-methyl-4-piperazinyl)-propyl) dimethylanesulfonate)

Side Effects Anticipated: Those seen with phenothiazine derivatives.

Dosage:

Vontil 1 mgm. for 4 weeks, orally

2 mgm. t.i.d. for 4 weeks, orally

Stelazine 2 mgm. t.i.d. for 4 weeks, orally

4 mgm. t.i.d. for 4 weeks, orally

The research staffs of the two hospitals were not aware that the compounds were being run simultaneously. The institutions were located in different areas in the state and there was no direct professional or administrative communication between the two. Figures 1 and 2 show the groups chosen in Hospitals A and B.

The groups were remarkably similar as to average age and duration of hospitalization. The most apparent difference was in the types of patient included; all the patients in Hospital A were diagnosed schizophrenia, while at Hospital B, 5 men-

tally deficient individuals, a chronic brain syndrome and one manic-depressive reaction were included.

MEASURE OF IMPROVEMENT

Indication of a consistent though slight increase in 2 or more of the following was taken as evidence of improvement in both hospitals:

Participation in activities

Socialization

Interest in personal appearance

Appropriate affect and speech

Attention span, alertness

"Feeling better" (patient's statement)

Friendliness

Cooperation

Attempt to communicate

Decrease in:

Agitation

Tension

Incontinence

Overt Hostility

FACTORS INDICATING SIDE EFFECTS

Leukopenia

Facial edema, skin rash

Tremor, loss of associated movements, muscular rigidity

Drooling, mask-like facies or dysphagia

Decrease in motor activity sufficient to interfere with participation in routine activities

Marked hypotension, syncope

Nausea and vomiting

Marked pallor

Increased agitation with depression and somatic complaints

FIGURE 1

HOSPITAL A

Patients: 35 Female: 19 Male: 16

Age Ranges: 32-63 Average: 49.8 years

Years Hospitalized: 5 years or over 30

4 years 2

2 years 1

1 year 2

Average: 17.5

Diagnosis: Schizophrenia

FIGURE 2

HOSPITAL B

Patients: 29 Female: 12 Male: 17

Age Ranges: 37-68 Average: 49.1 years

Years Hospitalized: 5 years or over 23

3 years 3

1 year 3

Average: 17.8

Diagnosis: Schizophrenia 22

Manic-depressive reaction,

manic type 1

CBS with psychotic reaction 1

Psychotic, Mentally deficient 4

Mentally deficient 1

RESULTS

	Drug	No. of Pts.	No. Improved	No. Side Effects
Hosp. A	Vontil	17	5	7
	Stelazine	18	4	10
	Totals	35	9 (25%)	17 (49%)
Hosp. B	Vontil	15	3	5
	Stelazine	14	2	3
	Totals	29	5 (17%)	8 (28%)

DISCUSSION

Hospital A reported improvements occurring in 25% of their group and Hospital B noted improvement in 17%. This discrepancy is attributed to differences in the observations the evaluators considered

significant and in the patients in the groups being tested. Hospital A also reported a higher incidence of side effects.

In view of the proximate results of these trials, it appears that research nurses and ward personnel can observe and record behavioral change in chronic patients with sufficient reliability to carry out drug evaluation studies. It is also apparent that although the two drugs tested are surely an aid in controlling the disturbed chronic

patient, the need for more definitive treatment for such groups will require continuing evaluation programs.

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ALTERNATING PSYCHOSES IN TWINS : REPORT OF 4 CASES¹

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Twins have a peculiar fascination for children and most adults. Burlingham(1) has pointed out that the fantasy of having a twin occurs frequently in childhood. Normal and abnormal aspects of personality development in twins have received widespread interest, partly because twin studies are believed to provide opportunity for separating hereditary and environmental influences on the development of an individual.

Large series of twins with psychotic manifestations have been studied by Kallman (2) and Slater(3) and in these the influence of genetic factors has been emphasized. Psychological patterns have been discussed in smaller numbers of twins by Burlingham (1) and others(4, 5, 6, 7). The successive occurrence of psychoses in twins within a short period of time has been reported(1, 4, 8) but reasons for this have not been advanced.

We were impressed by the interaction between the twins in each pair of our series and have attempted to determine how this interaction has influenced their emotional status and symptomatology.⁴

Four pairs of twins in which a psychotic reaction in one appeared to precipitate a similar reaction in the other were followed. Three pairs were identical, one fraternal. Psychiatric interviews, psychological tests, hospital records, and follow-up reports were used to elucidate this "contagion" of illness. Although the term alternating psychosis refers to a temporal sequence of events, the

details of the sequence varied in the 4 cases (Figure 1). The interval between the second twin's learning of the psychotic reaction in the first and the onset of psychosis in the second varied from one day to two months.

Case A.—Helen and Jane were 30-year-old identical twins admitted to the hospital in 1959 with paranoid schizophrenic reactions.

In 1957 Helen's husband began his own business and incurred a loss of income. Although Helen initially opposed this venture, she later appeared to accept the reasons given by her husband for the change. She began, however, to show hypomanic behavior and developed fears of various diseases, mainly gynecological and cardiac. Curettage done in 1958 and again in 1959 showed no abnormalities. In July 1959 she entered a psychiatric hospital for the first time because of marked somatic preoccupation and grandiosity. In the hospital she improved rapidly and was discharged in 3 weeks.

Jane reacted to Helen's hospitalization with apprehension concerning her own sanity and the health of her children. She began accusing her husband of infidelity and robbery and believed she was being poisoned first by her own and then by Helen's husband. She also had a number of somatic symptoms similar to her sister's. Although Jane had always been the more independent and popular while they were growing up, she turned to Helen for support after Helen's return from the hospital. Helen resented this dependency and told Jane of the jealousy she had always felt toward her in the past. Jane responded with anxiety and was admitted to another hospital. She arranged, however, to be transferred to the hospital Helen had recently left and to have the same psychiatrist.

Following Jane's hospitalization, her husband and children went to Helen's home to live. A month later, however, they returned to their own home because of Helen's hostility toward them. After their departure Helen began to fear she was pregnant and became depressed. The day after Jane returned home Helen was readmitted to the hospital. In the hospital Helen talked openly of her anger toward her sister for the latter's dependence on her. With psychotherapy, she gradually

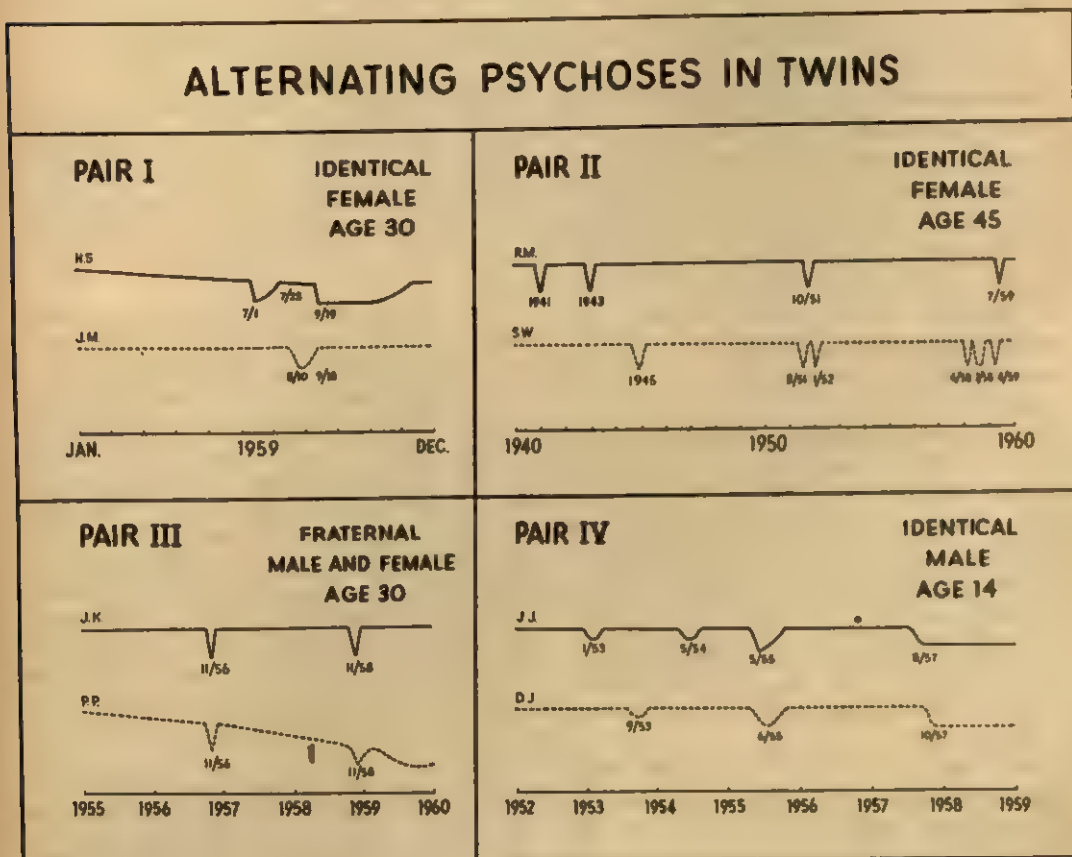
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FIGURE 1



improved and was discharged in 3 months.

Of note in the early history is a lack of overt mental illness in the twins despite depression and paranoid thinking in the parents. Jane was voted the most popular girl in her high school class, did well academically, finished nursing school without difficulty, married, and had 4 children before the onset of her psychosis. Her sister, although more quiet and serious, had a similar life pattern. Of interest because of the observations of Leonard (6) is the reported fact that the father was unable to distinguish one from the other until they were adults.

Psychological tests at the hospital compared the two sisters. These tests showed that Helen, from a characterological and descriptive standpoint, used hysterical defenses more than Jane, displayed more free affect, and tended more toward loneliness and depression. Jane was more obsessive and phobic but also more mature and better integrated. She was more perceptive and reality-oriented. She showed greater attachment to Helen than did Helen to her.

During Helen's psychosis, Jane became apprehensive and guilty about her sister's fate. As her thinking became more paranoid and her ability to maintain her equilibrium less adequate, she became more dependent on Helen.

Helen, now feeling stronger and less afraid of her twin sister, expressed the jealous resentment she had long felt. She attempted to reduce and expiate her resulting guilt by caring for Jane's family. Her reaction formation in the form of doing for others was not adequate, however, to conceal and contain her anger, resulting from the dependency demands of Jane's family. She also seemed to be defending herself against a fantasied relationship with Jane's husband. Her anger became more overt than before Jane's psychosis. When Jane's family left her home, Helen responded with guilt and depression.

Case B.—Sarah and Ruby were 45-year-old identical twins. Ruby first became depressed in 1941 following Sarah's marriage and was given outpatient electroshock therapy. Following the birth of Sarah's only child in 1943, Ruby had a psychotic reaction, schizo-affective in type. This reaction led to her initial admission to a psychiatric hospital, where she received insulin coma treatment.

During the next two years Sarah was increasingly preoccupied with the care of her colicky child. She began to complain of a neighbor's attention to her husband, accused her husband of infidelity, and became depressed. She was admitted to a psychiatric hospital and received a course of electro-shock treatments.

In 1950, Sarah's husband had an accident at work resulting in the loss of a leg. She became depressed and paranoid, feeling that Ruby was influencing her son, turning him against her. She was again hospitalized. Ruby became depressed and two months later was herself admitted to another hospital in a depressed state. She had delusions of a religious nature. In 1952, following a brief extra-marital experience, Sarah again became depressed and attempted suicide with poison.

In 1957 Sarah repaid a loan that had been made by Ruby following the accident in 1950. Ruby believed that interest should have been offered and thereafter visited her sister less often than she had before. Sarah became obsessively preoccupied with religion and had some bizarre religious delusions.

When, subsequently, Sarah's husband gave large amounts of money to two sons by his first wife, she felt he was taking advantage of her and developed paranoid thinking. She was taken regularly by Ruby for outpatient psychiatric treatment. In 1959, because of the persistence of her symptoms, she was rehospitalized.

Concurrently, Ruby asked Sarah's psychiatrist if he would accept her as a patient. She began outpatient treatment with him and, after becoming increasingly more depressed, was admitted to the same hospital as her sister. Both sisters improved symptomatically with further ECT and were able to return home, each within two months.

Psychological tests indicated that Ruby was more assertive, aggressive, and obsessive than Sarah, who was more schizoid. Ruby showed deep-seated feelings of rejection and felt her sister had been preferred by their father. Both sisters fantasied that their husbands were unfaithful.

Ruby, normally the more independent and externally oriented of the twins, felt deprived when Sarah developed a family life apart from the twinship. Ruby's independence, like Jane's, appeared to be a pseudo-independence that served to conceal her hostile and jealous but dependent relationship to her twin. Sarah became depressed and paranoid when there was a change in her relationship to her husband. Twice, when Sarah became psychotic, there was a disturbance in Ruby's adaptation and she also became psychotic. Sarah's illness magically "confirmed" for Ruby the danger of her jealousy toward her sister, leading to increased guilt, depression, and finally psychosis.

Case C.—Jean and Paul were 30-year-old fraternal twins. During childhood both tended to be quiet, good students, not active in social, athletic, or other extra-curricular activities. Jean did well in college and became a research chemist. Paul, although of superior intelligence, was unable to obtain satisfactory grades in college and entered the Army, where his 4-year career was unremarkable.

Although married in 1956, Jean continued living in her parents' home. Her husband did not support her. Later that year, following delivery of her first child, she developed a paranoid schizophrenic reaction and was admitted to the hospital. On being informed of her admission, Paul became overtly psychotic, "experienced blinding insight," and "knew" just how his sister felt inside. Subsequently he became progressively more withdrawn and began a gradual downhill course.

Jean quickly recovered and returned to work. A year later, while instituting divorce proceedings against her husband, she again experienced diffuse anxiety and went on a cruise. After being approached sexually by a ship's officer, she expressed fears of an atomic explosion and showed bizarre behavior. She was admitted to the hospital and remained there 6 weeks.

At this time Paul showed an increase in anxiety with confusion in thinking. On a visit to his sister in the hospital, she told him her psychosis was meant to help him by diverting the mother's attention to herself. He concurred in this idea and sought advice from her resident psychiatrist. Paul was found to be vague and disorganized and interested in learning about hospitalization for himself.

As Jean improved and resumed her work

successfully, Paul showed further deterioration in personal habits and in July, 1959, was admitted to the hospital. His hospital course was characterized by passive resistance to treatment, and he showed only slow improvement. He felt his sister's strong interest in helping him and his mother's desire to have him return home were threats to his well-being. To date, he has shown less ability to return to independent living than his sister.

Psychological tests showed these twins to be of superior intelligence. Jean showed more evidence of paranoid thinking, Paul of phobic tendencies. Both utilized denial and showed a tendency to withdraw in the presence of emotional stress.

These twins, although of opposite sex, showed most strikingly a tendency of one twin to "identify" with the other during illness. Paul "knew" how his sister felt inside. Later, although they rationalized that their psychoses served to protect each other from the mother, the underlying hostility in the

sister could be detected. She had always felt her brother to be the mother's favorite. Paul's guilt about Jean's illness produced an increase in his anxiety and disorganization and led him to seek advice from Jean's psychiatrist. One twin seeking treatment from the psychiatrist of the other was commonly found in this series.

Case D.—John and David were 14-year-old identical negro twins who were first admitted to the hospital in June 1955. John had an acute paranoid schizophrenic reaction following the accidental death of his dog. David accompanied his twin to the hospital in order to "help him" and was found there to be depressed and concerned with ideas of guilt. He felt responsible for the dog's death and, therefore, for John's illness.

In 1952 John had been referred elsewhere for psychiatric consultation because of soiling. He showed paranoid and depressive symptoms at that time. David began psychotherapy in the same clinic the following year for a depression.

TABLE 1

SYMPTOMS AT ONSET OF PSYCHOSIS

PAIR	DATE	TWIN	
		a	b
I	JUNE-JULY 1959	SOMATIC PREOCCUPATION GRANDIOSITY	ANXIOUS ABOUT ILLNESS OF (a) SOMATIC PREOCCUPATION PARANOID THINKING
	SEPTEMBER 1959	DEPRESSED FEAR OF PREGNANCY	
II	1941	(MARRIED)	DEPRESSED
	1943	(HAD ONLY CHILD)	DEPRESSED, CONFUSED
	1945	PARANOID THINKING	
	AUG-OCT. 1951	PARANOID THINKING DEPRESSED	PARANOID THINKING DEPRESSED
	1952	DEPRESSED	
	1958	SEXUAL PREOCCUPATION DELUSIONAL THINKING	
	1959	DELUSIONAL THINKING	DEPRESSED, FATIGUED
III	OCTOBER 1956	CONFUSED, WITHDRAWN PARANOID THINKING	CONFUSED, DISORGANIZED, PARANOID, GRANDIOSE
	NOVEMBER 1958	OBSSIVE-COMPULSIVE BEHAVIOR PARANOID THINKING	CONFUSED PARANOID THINKING
IV	MAY-JUNE 1955	PARANOID, WITHDRAWN	DEPRESSED, CONFUSED
	AUG.-OCT. 1957	PARANOID, CONFUSED	PARANOID, GRANDIOSE

Ideas and feelings of sinfulness, guilt, and punishment preoccupied the twins. John was more aggressive and grandiose, had better defined goals and self-concept. David, on the other hand, viewed his role as helper to his twin.

John's psychotic episodes appeared to be more related to outside environmental stresses than his brother's. David's episodes followed threats to his relationship to John or to his dependent tie to the mother, who seemed to favor him. A brief hospitalization of the mother for physical illness two months after John was rehospitalized in August 1957 in a paranoid state led to David's being admitted for the second time with a paranoid psychosis.

A symbiotic relationship was evident in the psychoses. When John became psychotic, David became more dependent on his mother. Although David felt more equal to John when the latter was in an emotionally decompensated state, he also felt guilty and depressed, viewing John's illness as a manifestation of the hostile portion of his ambivalent feelings toward him. The recurrence of psychosis in David tended to restore their previous equilibrium.

John, the more overtly independent, became psychotic after a loss outside the twinship, the death of his dog. David, guilty about his brother's decompensation, tried to undo his guilt by being helpful. This defense failed and he became depressed. When John again became psychotic, David, who had always felt closer to his mother, was able to handle his guilt as long as he could maintain an infantile relationship with her. When she was hospitalized, he lapsed into a psychosis similar to his brother's.

The similarity of symptoms commonly found in these psychotic episodes is to be noted in Table 1.

DISCUSSION

Study of twins provides special opportunities for investigating normal and abnormal personality development as well as the particular problems that result from the fact of being a twin. Twins usually enter a similar environment in infancy although, to be sure, even with identical twins the environment is never truly the same for both. Once parents find ways of distinguishing one twin from the other, the twins can be

seen as individuals with separate characteristics as well as one of a pair. Such distinguishing features may lead to different life experiences and influence the development of significant behavioral differences in the twins (7).

Dorothy Burlingham has stated that the needs of twins for each other makes the relationship the closest known tie between two individuals. She discussed the frequent "contagion of feeling" between twins, their identification with each other, tendency to form a working team, reactions to separations, envy and jealousy, and dependence (1).

These features were seen in the adolescent and adult twin pairs of this series. In addition, problems of later maturation could be observed. Difficulties of adult heterosexual adjustment with the emergence of strong sexual and hostile feelings toward other family members and reaction formations against these were prominent. The breakdown of personality organization of one twin with psychosis was followed by a psychotic reaction in the second; and in each pair, the second twin sought help from the physician or hospital treating the first.

In addition to common patterns already noted, the following features appeared in histories of two or more of the pairs: 1. Excessive interdependence in childhood; 2. Distrust of the other twin, the family, or the world at large; 3. Hostile feelings toward the other twin; 4. Similarities of psychotic reactions; 5. Prominence of identification and the use of projection and introjection in handling anxiety.

In this preliminary investigation special attention has been focused on the established interactional patterns of the twins, the disturbances in these patterns, the attempts at compensation in order to maintain a nonpsychotic adaptation, and the failures of these attempts with resulting psychoses. In each pair a change of status of one twin was followed by a change in the other. We have made two hypotheses: first, when alternating psychoses occurred, the psychotic reactions in one twin precipitated and were related psychodynamically to the psychotic reactions in the other; and, second, the psychoses, in the absence of successful compensatory relation-

ships, represent one means for the twins to continue their relationship with each other.

Most frequently, alternating psychoses, as described above, occurred when one twin was experiencing anger toward an important person in his environment, the threat of loss of important persons or objects, or combinations of the two. In the adult pairs, conflict between a twin and her marital partner was often the apparent precipitating event.

Such stresses do not necessarily lead to psychotic states, but stress in the presence of an inadequate ego, a lack of emotional support in the person's environment, or hereditary or constitutional defects may lead to neurotic or to psychotic symptomatology.

Intense rivalries and hostile feelings with attendant distrust appeared commonly and in a number of ways. Disagreements occurred over money between one pair of twins and between one of these and her husband, whom she felt was unfaithful to her. Her accusations occurred after she had terminated a brief extramarital relationship. One twin thought she was being poisoned by her husband and by her twin's husband. The fraternal twins blamed their mother for their psychotic reactions and each believed their psychotic reactions served to protect the other from the mother.

A hierarchy of defense mechanism was used in attempting to defend against hostile feelings. Initially such mechanisms as reaction formation, undoing, or, on a more conscious level, suppression were utilized. When these proved inadequate, other defenses such as denial and displacement and ultimately more pathological mechanisms such as projection and turning against oneself were to be seen. Depression and paranoid thinking occurred commonly as symptoms in the twins during periods of psychosis.

Leonard (6) has shown the importance of identification in twins. Early in life, twins may identify with themselves even more than with the mother; the other twin is always available; the mother cannot be. Later, identification is used as one defense against feelings of rivalry. Identification with the other twin was prominent in each pair of this series; manifestations of this

could be observed during illness as well as in health. There was similarity of symptoms, awareness of the feelings of the other, and a desire to act together against parental figures. At that same time, a change in the active-passive relationship of one to the other was a source of anxiety.

The importance and fate of sexual impulses in alternating psychoses is less clear. One of the 14-year-old twins was obsessively preoccupied at the time of his first psychotic reaction with the "shrinking up" of a testicle. In his associations he related this to the mutilation of his pet dog, whose death following an accident appeared to precipitate his first psychosis. Another twin, in the course of a psychotic reaction precipitated by his sister's post-partum psychosis, became anxious about his sexual feelings toward his mother and sister. Another twin's psychosis included thoughts that her husband was unfaithful and that her oldest son might grow up to be a 'homosexual. Her sister remained free of symptoms while caring for her twin's husband and children but became depressed when they returned to their own home.

The dependency of the twins on each other appeared to be accompanied by feelings of competitiveness, envy, and anger, often intensified when there was a threat of separation. When, for example, one twin required psychiatric treatment, her sister accompanied her each time to the psychiatrist's office. He became aware that the second twin was seeking increasing amounts of his time and would have utilized all the interview time if allowed to do so.

When the dependent relationship was jeopardized by a psychiatric hospitalization of one twin, a depressive reaction often developed in the other. Burlingham has observed that twins suffer acutely when separated from each other. One twin identifies with the other who is missing, taking over his characteristics and in fact trying to be the missing twin (1).

Folie à deux bears certain resemblances to the reactions here described. The similarity of symptoms in close family members and the onset of a psychotic reaction in one following and apparently precipitated by a psychosis in the other are found in both. Psychodynamic features of this syndrome

have been reported by Deutsch(9) and others(5, 10, 11).

CONCLUSIONS AND SUMMARY

In this series, a psychotic reaction in one twin disturbed the twin relationship. When attempts of the other twin to compensate for this disturbance were not successful, an alternating psychotic reaction developed. Most often the psychoses were of paranoid or depressive type, thus emphasizing the frequent attributing of cause for the illness to the other twin and the acceptance of responsibility by that twin with subsequent guilt and depression.

There was evidence of strong rivalry between the twins during illness as well as during relatively well periods; this rivalry led to a sharing of medical and family care. The second twin was able unconsciously to exact as much help from his environment as the first. The unusually strong identification observed in normal twins appeared to carry over into illness. Ego integrity of one twin may depend on the integrity of the ego of the other.

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INDIVIDUALITY IN RESPONSES OF CHILDREN TO SIMILAR ENVIRONMENTAL SITUATIONS¹

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Prevalent in psychiatry is the view that the process of socialization in childhood necessarily involves a series of traumata and frustrations. Thus, an influential worker in this field states of weaning that "even under the most favorable circumstances, this stage leaves a residue of a primary sense of evil and doom and of a universal nostalgia for a lost paradise"(6), of toilet-training that "bowel and bladder training has become the most obviously disturbing item of child training in wide circles of our society"(7), and of the response to siblings as involving "jealousy and rivalry . . . now come to a climax in a final contest for a favored position with the mother; the inevitable failure leads to resignation, guilt and anxiety"(8). So pervasive is the influence of this attitude that even an investigator who has himself demonstrated that sucking drive in infancy is at least in part the consequence of opportunities to suck rather than the expression of an innate oral drive states(5), in a recent publication remarks that "the weaning process, except under the most fortunate circumstances, is bound to be frustrating to the child"(14). Such statements involve the assumption that change in established patterns of behavior related to physiologic and social needs of the child is in and of itself frustrating. Thus, toilet-training with a change to the successful use of the toilet bowl rather than the diaper is viewed as a necessarily negative experience. Further, from this point of view the most benign outcome of such a change would be the minimization of trauma. Similarly, more complex parental socialization practices,

such as punishment in order to eliminate aggressive behavior in the child is categorized as anxiety-producing with the production of displaced aggression(15).

The view of socialization as a continuous process of frustration has been expressed in its most general form by Freud, in his statement that "civilization is the fruit of the renunciation of instinctual satisfaction"(11). This theoretical attitude derives from the retrospective analysis of individuals experiencing sufficient difficulty in social functioning to lead them to seek psychoanalytic treatment. The view has been extended and further reinforced by the attribution of etiologic significance to difficulties surrounding the socialization process in children who manifest various behavioral disturbances. The alternative proposition that an underlying disorder may have produced both the difficulties in socialization and the later identified behavioral pathology has only recently begun to receive serious attention(1, 3, 10).

The present report seeks to re-examine the question of the effects of important socialization experiences in early childhood on a population of 110 normal children whose development has been followed continuously from the first months of life. It therefore involves an ongoing and anterospective study in which the totality of behaviors preceding, surrounding and following such presumably significant experiences as weaning, toilet-training, the return of the mother to work, and the birth of a younger sibling, are available for analysis. An additional direction of inquiry is made possible by virtue of the prior identification of the children in terms of primary characteristics of reactivity, which have been described in earlier reports(4, 17). These characteristics which can be delineated at two to three months of age in each child and which persist in a stable form as the child grows older, we have called the primary reaction pattern. As yet, no conclusion is

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possible as to whether the patterns are constitutional, environmentally determined, or a combination of both. Knowledge of this patterning permits the exploration of the influence of such initial features of reactivity on the nature of the responses to various socializing forces.

Data on the 110 children now being followed are gathered by: 1. Histories from the parents detailing the behavior of the child in objective, factual terms in the various functional activities of daily life, as well as the sequence of reactions to any special situations. These histories are taken at 3 month intervals for a year, starting at 2-3 months of age, and then at 6 month intervals; 2. Periods of direct observation at one or more points during infancy in most of the children; 3. Direct observation of the child's behavior in a standard play and psychological test situation, done at 3 years of age; 4. Direct observation of the child's behavior in nursery school, and interviews with the teacher as to the details of the child's functioning in school; and 5. A structured interview with each mother and father designed to elicit information on parental attitudes and child-care practices.

The families of our population represent a relatively homogeneous middle-class group, with a majority in various professional occupations. Child-care practices are basically permissive and child-centered, with an emphasis on satisfying the needs and desires of the child.

Details of the methodology, validation of the parental interview technique, and results through the first two years of life have been reported elsewhere (4, 17). In the 3-4 years of life that these children have been followed, a number of specific types of potentially stressful environmental situations have occurred to many of them. The details of the behavior of the children before, during and after the occurrence of these situations, as well as information as to parental attitudes and practices, have been analyzed.

The findings will be presented for each of the various types of situations studied. Since serious questions have been raised about the errors inherent in limiting observation of disturbance to the immediate function that is being influenced (9), in this study in each situation evidence of be-

havioral disturbance was sought, not only in the area directly involved, for example feeding in the course of weaning, but also in other aspects of functioning, including sleep, toileting and social responses. A second problem, namely the possibility of long delayed manifestations of behavioral disturbance, can only be explored when the children are older.

WEANING AND TOILET-TRAINING

About 40% of the mothers breast-fed their infants with the use of supplementary bottle feedings. In almost all children, the shift to the exclusive use of the bottle was accomplished gradually in the first 2-5 months. In no case was any disturbance in the infant's behavior noted with this change. Weaning from the bottle in all the children was uniformly started by offering the child sips from a cup at mealtime beginning sometime between 5 and 11 months of age. By the end of the third year 60% of the children were completely weaned, with the earliest age being at 12 months. In those children not weaned by 3 years, the bottle was taken primarily at bed and naptime, while the cup was used at mealtime. Most of the mothers of this latter group have been reluctant to make complete weaning an issue, most usually for fear of creating a sleep problem. One-third of those completely weaned accomplished this by 18 months. In many of these cases the weaning was accomplished by the child's spontaneous rejection of the bottle. In some instances the mothers persisted in their efforts to continue with bottle feeding and only stopped when they found their efforts to be of no avail. These attempts of the mothers to delay weaning were due to their fears, which they expressed openly in the interviews with them, that early weaning or toilet training might be traumatic to the child. These fears were based on the presumably authoritative statements they had heard and read as to the dangers of such early weaning and toilet-training. Some of the mothers even confessed to feeling uncomfortable and uneasy at the early weaning accomplished by the child, because they felt their friends would interpret this as evidence of rigid, outdated and harmful child-care practice. In only one case in the first 50 analyzed

has there been some evidence of significant behavioral disturbance associated with the weaning process.

Our data do not support the concept of inevitable psychic trauma inherent in the weaning process. With the permissive approach by the parents, weaning did not appear to be a source of disturbance and under certain circumstances may even have been a positive child-initiated experience. The issue might have been different if there had been rigid insistence on early weaning in the face of resistance by the child. In such situations, the effect on the child may be unfavorable, as it can be whenever the parent-child interaction is antagonistic.

In toilet-training our data are very similar to the findings in weaning. Since all the mothers in this group are permissive and are concerned with the presumed dangers of early training, only 20% started training below one year of age. The median starting age for toilet-training was 16 months. The process was usually a slow one, with the mothers stopping their attempts at training for periods of several months or more if the children objected. In most cases training was completed between 18 and 36 months. In a few children training was not successfully completed until the fourth year.

Toilet-training in the first 50 cases analyzed was accomplished without evidence of disturbance, except in one child. In a number of cases, the children themselves initiated the training, usually in imitation of an older sibling. In this function, as with weaning, the evidence does not support the concept that toilet-training is necessarily a frustrating and traumatic experience.

BIRTH OF A YOUNGER SIBLING

In 18 of the families, a younger sibling has been born since the start of the study. This has provided the opportunity to record the character and intensity of the older child's response to the introduction of an infant into the family. Over half of the 18 children showed disturbance at this event. The two main types of disturbance noted were: 1. Reversion to more infantile patterns of functioning in socialization, sleeping, feeding and toileting; and 2. Aggressive behavior toward the new baby. In 6 cases the reactions were mild and transient,

in one moderate, and in 3 prolonged and severe. Three children showed no discernible disturbance in functioning and 5 actually showed an improvement in their social responses. Thus, children reacted with various degrees of positive and negative behavior to a new sibling.

Both environmental factors and the characteristics of primary reactivity in the individual child appear to contribute to variability of response to new children. The entry of a younger sibling into the family group necessarily affects the amount of time and attention given to the child by the mother and by other members of the household. Where this change in circumstances leads to disturbance in the child, the mother is objectively unable appreciably to modify the situation as she can for weaning or toilet-training. It is of interest, therefore, that the intensity and duration of negative responses were greater in those who were themselves first children than in those who already had older siblings. For the only child the entry of a new baby into the family group seemed to constitute a much greater environmental change. Age at the time of new births also influenced reactions. There was less disturbance in those children who were under 18 months of age when the new sibling was born. A third influential factor was the degree of prior paternal involvement. In several children whose fathers had been especially active in caring for them and whose fathers continued to do so even after the arrival of the new baby, the turning of the mother's attention to the younger sibling was not an especially disturbing event. In one family where both parents were very much involved with the first child, there was no reaction when the mother took care of the new baby, but the child, a boy in his third year, developed stuttering as soon as the father began to handle the baby. As soon as the father stopped this and devoted himself again to the older child, the stuttering stopped.

On the organismic side, qualitative analysis of the data has shown a definite relationship between the characteristics of primary reactivity in the child and the type of response to the birth of a sibling. Those children who from early infancy on showed mild, positive regular responses with quick adapt-

ability to new stimuli, such as the bath, change in sleep schedule and the introduction of new foods, manifested a similar pattern with the new baby. In this group, disturbances were minimal or non-existent. On the other hand, those children characterized by intense, negative and irregular responses with slow adaptability tended to show greater and more prolonged disturbances after the birth of a sibling.

MOTHER'S RETURN TO WORK

Six of the mothers returned to full-time professional work when the child was 2-3 months old. There was intense, prolonged disturbance in one child and none observable in the other 5. The child who was upset had intense, irregular, negative and non-adaptive responses as the over-all primary pattern. The other 5 who are now all in the fourth year of life, have shown no significant disturbance in functioning. The primary reaction patterns of these children have been of the regular, mild, positive and adaptive type.

PARENTAL PRACTICES AND ATTITUDES

A quantitative analysis of our data has confirmed other studies (2, 12, 13, 16), indicating a lack of any one-to-one correlation between any specific parental practice and its effectiveness. In our child-centered families the mothers have most usually tried to meet the child's demands, and where this has not been possible have tried to alter the stimulus or the situation rather than insist on the child's alteration of a negative response. In spite of parental similarities of approach, the responses of the different children in the areas of sleep, feeding, toilet-training and social restraint have shown wide variation. Preliminary impressions, which await confirmation by a fuller analysis now in progress, are that this variability in responsiveness may be related both to the primary pattern of the individual child and to the over-all attitudes of the parents.

It also appears that while the parental attitudes do play a very important role in influencing the child's development, the direction of this influence is significantly affected by the child's primary reaction pattern. For example, several mothers have

been pressuring and domineering in their approach. In two cases, the children have developed strong negativistic trends, but in a third case it is significant that the child has become acquiescent to his mother's demands and even submissive. The first two children have intense, negative and non-adaptive primary reactive characteristics, whereas the third is mild, positive and adaptive.

It has also been of great interest to observe the progressive crystallization of specific parental attitudes related to the primary reactive characteristics of the child. Where the child's primary pattern has made his care easy, the mother has often shown a much quicker and more intense development of positive attitudes than in those cases in which the child's primary reactions have made his care more difficult and time-consuming. This influence of the child on the parent has been most dramatically evident in two families where there are twins who showed differences in patterning of reactivity from early infancy on. In each family, the mother, who started with the same attitude toward the two infants, has developed increasingly dissimilar responses to them as they have grown older. In large part, these attitudes are based on her reaction to their primary differences. In 3 other families with twins with similar patterning each to the other, this differentiation of parental attitude has not been evident.

OTHER SPECIAL EVENTS

Five children were hospitalized during the first two years of life for various illnesses and operative procedures. The mothers stayed at the hospital with the child either for part or all of each day. No significant disturbance related to the hospitalization was evident in three children after the return home. In one child there was a moderate reaction which appeared related to the limitations imposed by a hip cast. Only in one child was there marked disturbance. In this case the mother was very pressuring, overprotective and at the same time hostile to the child, and during the one week period of hospitalization literally insisted on staying with her day and night.

Ten children have had to wear an orthopedic foot bar at night for several months

or more during the first year of life. After the initial period of adaptation, which took several days to two weeks, no persistent disturbance in reaction to this restraint developed, except in the same child mentioned above with severe reaction to hospitalization.

Separation or divorce of the parents has occurred in 4 families, in each case before the child was 2 years of age. No significant acute disturbance has occurred in any of these children, though, of course, no prediction can be made as to any long-term effects.

DISCUSSION AND CONCLUSIONS

The above data indicate that the character of the response of a young child to specific situations or to the over-all attitude of the parent is the result of the interplay between environmental factors and the primary reaction pattern. With certain events, such as weaning and toilet-training, the parent can guide and modify the approach in accordance with the reactions of the individual child so that disturbance is kept to a minimum. With the birth of a younger sibling, where the parent does not have this degree of control over the situation, the possibility of disturbance is much greater. The influence of the child's primary reaction pattern is more obvious in the marked variability of response of different children to this event.

On the other hand, the data do not support the concept that weaning and toilet-training are necessarily traumatic, an assumption usually based on the hypothesis that these events cause frustration of libidinous drives. Such frustration, and such fixed drive states are not evident in the behavior of the various children in this study. This is especially highlighted by the number of cases in which the child, instead of clinging to such presumed instinctual gratifications, initiated weaning or toilet-training himself over the mother's resistance.

Further, our data do not support the prevalent idea that the process of socialization in the young child necessarily involves a sequence of frustrating and traumatic events. This concept is based on the assumption that it must always be a negative ex-

perience for the child to give up an activity such as sucking which is associated with the gratification of a biological need, or to lose a part of the mother's time and attention if she returns to work or a younger sibling enters the family, or to change initial patterns of activity as the result of training, such as in bladder and bowel evacuation. The learning of the many social restraints necessary for the child's safety, for the recognition of the needs of others, and for the prevention of damage to household objects, is also considered to involve primarily the frustration of the child's own drives. Absent from these various formulations is the concept that the processes involved in socialization may have very important positive aspects for the child. The learning of a new activity, the mastery of a function such as sphincter control, the stimulus for changes in behavioral patterns provided by the identification with and desire to imitate a parent or older sibling may have important positive effects on the growing child.

The wide variations in response to similar environmental situations occurring during the process of socialization shown by the children in this study indicates that it is impossible to make any generalization as to the effect of such events that will be valid for all children. Every experience is an individualized one for each child and its psychological influence can be understood only in terms of the environmental context in which it occurs and of the primary characteristics of reactivity of the child.

Finally, it is important for parents to know that their basic activities with the infant, such as weaning, toilet-training, and the teaching of various restraints and prohibitions, are not necessarily traumatic and frustrating to the child, and may even be positive experiences. The same is true of events which result in the diminution of the mother's time devoted to that particular child, as with the birth of a younger sibling. Prevalent psychiatric attitudes have led innumerable mothers to feel apprehensive as to the potentially harmful effects of these activities and events on the child, so that the normal processes of child-care take on the aspect of a hazardous and treacherous project(2). This apprehension was graphi-

cally demonstrated by the mothers in our study population who resisted the child's spontaneous demand to be weaned early, for fear of its consequences. The reassurance that the normal processes of socialization are not necessarily fraught with all kinds of psychological dangers for the child has proven very helpful to these mothers, and can, with profit, be extended to all those who have suffered from the influence of incorrect theory,

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DISCUSSION OF TWO PAPERS¹

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Since several papers presented at this meeting conveyed an intriguing object lesson in the versatility of the twin study method or, more specifically, of the many investigators now using it, I appreciate this opportunity to comment on them *en bloc*. A definite advantage of this arrangement is that instead of being forced in my brief remarks to harp on the obvious procedural and interpretative limitations of psychiatric twin studies, I can place the emphasis on their matchless potentialities. To make the most of them, however, twin study projects call for a representative series of twins, amenable to the employment of appropriate statistical techniques. The statistics describing such a sample are computed from twin index cases rather than nonrandomly collected twin pairs.

Twins in general have long been known to be fascinating research subjects, irrespective of the fact that they offer unique opportunities for combined cross-sectional and longitudinal studies in a family setting. However, single observations on twins are rarely significant in themselves nor are twin data as such less defenseless against abuse than any other set of statistics. To paraphrase recent comments by Morison and Li, facts about twins do not give us a direct sense of cause and effect, nor are twins as a research species so uniquely unique that they defy any attempt at statistical treatment.

Whatever may be said about statistics generally, it cannot be doubted that reliance on statistical techniques will go a long way towards helping a psychiatric twin research worker, as much as it does any other investigator in the behavioral sciences, to detach himself from an intuitive sense of his material. In other words, in order to have a

better understanding of the complex etiology of disordered behavior patterns, contemporary psychiatry needs scientifically validated facts more urgently than a great number of casuistic observations which seem somehow compatible with a neat hypothesis.

To avoid possible misunderstanding, I hasten to say a few special words of praise for one of the papers to be discussed by me, that of Dr. Chess and her co-workers on the variability of the young child's response to similar environmental situations and, in turn, the progressive crystallization of specific maternal attitudes in response to the primary reaction pattern of the child. While the emphasis of this carefully conducted study has been on single-born children, it is certainly of interest, and in agreement with many other observations, that in families with twins who showed dissimilarity in behavioral patterning from early infancy on, there was a substantial difference in the effect exerted by the children on the mother. By the same token, it was to be expected, that no comparable differentiation of maternal attitudes could be observed in the families of twins who were similar in their primary reaction patterns.

For a longitudinal record of these twin histories it would of course be helpful to have all essential zygosity data specified in detail. The same stipulation applies to the findings in the other twin studies presented in this section. The given observations are based on a combined total of seven pairs of twins with an assortment of at least eight different forms of psychiatric disorder. The age range of the twins was from 12 to 45 years, and one of the pairs was of opposite sex and therefore dizygotic.

Regarding the rather vague reference to our finding of a higher schizophrenia risk figure for two-egg twin partners than for "non-twin siblings," it should be pointed out that the risk difference between full siblings and all dizygotic cotwins extended from 14.2 to 14.5 per cent in the 1953 material cited, and from 14.3 to 14.7 per cent

¹Two papers presented at the annual meeting of The American Psychiatric Association in Atlantic City on May 10, 1960: 1. Stella Chess, Alexander Thomas, and Herbert Birch: *Individuality in Responses of Children to Similar Environmental Situations*; and 2. E. Gardner Jacobs, and Alvin M. Mesnikoff: *Alternating Psychoses in Twins: Report of Four Cases*.

in an earlier analysis published in 1946. What has not been mentioned by Dr. Jacobs and Dr. Mesnikoff is that in the same families, the morbidity risk of the step-sibs and half-sibs of schizophrenic twin index cases varied from 1.8 to 7.0 per cent. At any rate, it should not be inferred that the genetic theory of schizophrenia depends only on the interpretation of concordant twin data.

Another aspect to be considered is that in our original sample of 691 schizophrenic twin index families, simultaneous occurrence of schizophrenic symptoms was observed in only 17.6 per cent of one-egg twin pairs. In about one-half of this consecutive series of pairs—52.9 per cent, to be exact—there was a difference in disease onset of one month to four years, while in over one-quarter the difference observed was from four to twelve years. Significant dissimilarities in symptomatology were seen especially in twin partners with a definite disparity in age of onset.

Even more striking was the finding that similarity and dissimilarity in environmental constellations were almost equally distributed in the series of discordant pairs. More specifically, 49.3 per cent of two-egg co-twins remained free of schizophrenia although they had shared the same environment with a schizophrenic twin; and approximately one-quarter of one-egg pairs (22.4%) became concordant without similar environment. A more recent twin study of preadolescent forms of schizophrenia confirmed the nonexistence of a simple correlation between inadequacy of the parental home and an early onset of a schizophrenic psychosis.

The last point to be covered may be a matter of semantics to some people, but it happens to be a pet peeve of mine of rather long standing. It concerns the introduction of still another synonym—the phrase “alternating psychoses”—for one of the clearly anachronistic expressions of modern psychiatry: *folie à deux*, variously referred to as induced insanity or psychosis of association.

Originally used by Lasègue and Fabret in 1877 to describe the transference of delusional ideas from a psychotic individual to an intimate and submissive associate, re-

placing such older terms as infectious insanity and psychic contagion, the concept of *folie à deux* was later stretched so far as to be applied to the coexistence of any mental disorders of a similar variety in two or more persons who seemed closely enough associated. For example, the term was frequently employed either to describe or to explain similar schizophrenic or depressive symptoms in twin partners or two other members of a family unit. Equivalent diagnostic labels used were collective, contagious, simultaneous, reciprocal or double insanity; mystic paranoia; and induced, influenced, imposed, communicated or associated psychosis. In this manner, and subtly reinforced by the equally ineradicable belief in the inheritance of acquired characteristics, the concept of *folie à deux* helped to perpetuate the notion of a magic phenomenon producing mental disease through personal contact.

Many years ago (1946), for the sake of creating a more objective attitude toward the phenomena and techniques of psychiatric genetics, I suggested limiting the term *folie à deux* to the transference of circumscribed delusions between closely associated but unrelated persons. With our present knowledge still far from enabling us—with or without intuition—to separate the interacting effects of genetic and nongenetic elements in the etiology of behavior disorders in consanguineous settings, my original suggestion still holds in 1960. If an unbalanced chromosome complement due to non-disjunction of chromosome 21 occurs more frequently in the child of an older woman than in that of a younger one, a conceptual preference for alluding to the mother's age as a sociopathic factor will be of very limited value in understanding the etiology of mongolism. In such instances, time alone will be able to determine the validity of a tentative hypothesis, however attractive or appealing it may have been at the time when it was formulated.

May I conclude my comments with a word of thanks to the various sets of investigators who contributed to this interesting session. All reports were thought-provoking and, therefore, of definite merit.

BEHAVIORAL CATEGORIES OF CHILDHOOD¹

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A group of descriptively delineated behavioral categories of children is presented for critical review. We are interested in ascertaining whether other professional workers will recognize these behavioral patterns. The patterns are presented tentatively as they have appeared in clinical practice with children rather than as a final formulation.

Fear or anxiety is an inherent reaction to a new and important situation, and personality is patterned to a significant degree by the manner in which an individual responds to these feelings. As a child is introduced into a treatment situation, he will be apprehensive, and we have been accustomed to describing the manner in which he attempts to handle himself as fear or anxiety is aroused. Such reactive patterns are confirmed as the therapist becomes intimately acquainted with the child and constitute the framework in which the child's behavior is examined. The patterns are surprisingly consistent for a given child.

Some years ago, we reviewed a large number of case records and listed the behavioral patterns which were described. With usage, the following categories became easily recognized: 1. Active Superficial (including children with circumscribed interest patterns), 2. Openly Antagonistic (actively antagonistic), 3. Active Control, 4. Passive Control, 5. Passive Apprehensive.

These categories do not correspond with classical nosological groupings, but can be recognized as patterned tendencies within the group of transient situational reactions, psychoneuroses, personality or character disorders, the organic and intellectual defect states, and the normal child.

We are not convinced of the inclusiveness

of the categories and would entertain suggestions for additions or alteration of the groupings. They have had considerable use within the program of the Children's Service Center, and we urge your consideration of them.

A category might be viewed as a pattern of defense. The positive aspect of a defense reaction is that it is a way the individual has discovered of responding in certain circumstances. Such patterned responses become characteristic for each child. On occasion, a child may react with a variety of the responses listed, and indeed with other defenses, but it is our impression that there is a tendency to follow certain patterns in a repetitive manner. The categories have singled out a feature of the accustomed responses of the child, which dominates his reactive patterns. We have concluded that children do not from time to time alter their responses to utilize extensively a variety of the categorical patterns.

Activity refers to the manner of a child's approach to interpersonal relationships rather than to the quantity of motor discharge. In the active group, the child directs his actions with a secondary concern for the response of the other individual. The passive child does not initiate issues, but responds in his accustomed manner as he is required by the activity of the other person.

The *actively superficial* child presents an apparent shallowness in emotional response and is difficult to engage in meaningful discussion of his attitudes and emotions. He may converse on impersonal topics, but is not essentially concerned with communication and is evasive or disinterested when attempts are made to discuss his personal feelings. Such moves are countered or anticipated with self-centered activities or talk.

There is a tendency to deny the existence of troubled feeling or of behavioral difficulty. The child expresses positive or pleasant feelings, but does not reveal negative, hostile, or openly aggressive feeling. He is superficially conforming, ready to please

¹ Read at the 116th annual meeting of The American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

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or be obliging, and unwilling to invoke displeasure.

There may be an air of self-satisfaction. Such children may be popular because they do not offend or challenge. They, however, avoid close friendships.

The following case illustrates this category :

Case 1.—Boy, age 10 years. A good looking, likeable boy, John adjusted to camp readily. Although he played games and joined in activities, he was never part of the group. His relationships were superficial with the children and staff. He was not truthful and admitted little or no responsibility for stealing or leaving camp grounds without permission. John always had a story to cover his actions. If he had stolen money, he would say that his father had sent it to him. John did not talk freely of his parents and did not write to them, although he always looked for mail.

The *actively antagonistic* child is perhaps more aptly termed openly antagonistic. He is hostile, negative or defiant in his approach to people and situations. He does not conform and stirs rebellion in others. His fear may be obvious, but is denied, even when he is aware of it. Such children may engage in antisocial acts and constitute one group of delinquents.

He challenges and invites others into struggle. He denies personal problems, and projects the difficulty onto others. He seems to fight against a friendly approach to him. He has a need to oppose and is ever ready to defend himself or attack when he is threatened. He cannot relate easily at a positive level.

Case 2. (Excerpt from an initial interview.) —Boy, age 5 years. "Mrs. Depew is going to bring her nice little boy down here and I will have a fine time. Her boy fights." I say that I thought Andy was the one who fights. He says, "My name is Andrew. Do you mean me?"

"I'll tell you something about Dexter Depew. The kids in school call him 'Stinky,' and next week I am going to wear something and scare you—my cowboy suit." He continues, "Hey, do you want me to come down here any more?" I say that I thought he came down here because he had a job to do. He continues, "I'll beat you up. I can be anywhere I want to."

One notes the manner in which this boy meets a new situation with an habitually aggressive response.

Control is a practice of limiting or prohibiting the activity of the other person, so that one is not called on to respond in a manner determined for him. If you allow another person freedom of action, you must react to his directional moves. The controlling patient avoids challenge and the accompanying fear or anxiety by keeping matters in his own terms and restricting the initiative of those who would associate with him. Such control of the behavior of another person is distinguished from so called self-control.

The *actively controlling* child attempts to dominate and direct those about him so that fear will not be aroused. He is demanding of others, but is himself dissatisfied. He does not accept limits. He becomes querulous or petulant, when compelled to attend or respond. He is disturbing in a group, because of his persistent drive to compel others to respond to his demands. He will act in a group only on his own terms. The important distinguishing feature is the active determining influence in the group or in a personal relationship.

The following case excerpt is illustrative.

Case 3.—Boy, age 8 years. "Don't call me Morton, call me John." He doesn't like Morton. He makes people call him John. When I open a window, he says, "Don't open the window; it is too cold." Then he looks at the chairs and says, "Oh, if I sit on one of those chairs, I'll bust it. Yes, I'll bust it. I'll cave those chairs through, once I sit on them." I say that I imagine they are strong enough to hold him, but I suppose he feels a little frightened about using those chairs. He says, "I have to sit down, but I'm not going to."

One notes the manner in which this boy dictates that he be called by a name other than his own. He does not allow the therapist to open a window, and expresses his reluctance to participate freely, even to the extent of using a chair.

Passive control is sometimes more difficult to distinguish, but becomes apparent when the child's behavior is examined over an extended period. Such children initially

may appear to be emotionally unresponsive, but do persistently influence the activities of the therapist or those about them. They differ from the active superficial group in that they are not ready to conform or be obliging. They are not deterred by the displeasure of others. They differ from the active control group in their reluctance to express evident antagonism. While passive, they are not neutral in a relationship, and do control and influence the behavior of those about them.

There is little overt indication of emotional turmoil or concern. They appear to lack initiative or spontaneity. Discussion of personal feeling is avoided. Verbal contact is at a minimum and they may hold to periods of silence or inactivity. One may gain an impression of an emotional defect because of the unresponsiveness and the child's inability to communicate.

Case 4.—Girl, age 10 years. She doesn't feel very good about herself, therefore, she should change her habits. She says that she tears her clothes. "I don't say I am mad, I just do it." I say, "Tearing your clothes is the way you tell people you are angry." She says, "That's the way I do it; I don't say it. I keep what I feel right inside." She says, "I only think it inside; I don't seem to say it." I say, "That sounds different from tearing clothes, that sounds like trouble in really getting some of these feelings out." She continues, "I guess that's my part. I talk back in one way—sometimes it's like talking back. Mommy says to do something, I don't say I won't. I do in some way say I won't. She'll say there were 14 girls, I'll say there were 12. Then she'll think it over and say there were 12, and I'll keep on saying there were 14. I'll say I want it that way. I think I'm right and I get mad."

The *passive apprehensive* group is easy to recognize. The fear or apprehension is evident to the patient and to others. The child is reluctant to express antagonism and to act spontaneously or demonstrate initiative. He expresses his apprehension readily and openly. He differs from the passively controlling in that he conforms and follows directions. He is not an effective influence in the group, and usually prefers younger associates.

The passively apprehensive child is distinguished from the passively controlling

child most readily because of his evident emotional distress. His fear is diffuse and easily discerned by the therapist. He appears helpless and cries easily when challenged. He may be aware of his fear and unable to act decisively. He asks for direction from the therapist, but his response is passive and uncertain.

Case 5.—Boy, age 8 years. Then he turns to me and says, "They haven't gone yet. If they have, I don't know what I'll do. I'll be scared." I say, "Maybe you feel scared just being here." He asks me if I know the way to his home. I say that I think he will get home all right. He says he's not going to stay here. "When am I going down?" Then he cries and says, "I'm going downstairs." I ask him why he has come—that children usually come here to get something done. He says, "I'm not going to do anything. I feel like crying." He starts to cry and says he wants to go home.

The categories are useful in communication among clinical staff members. In collaborative work, with a number of professional workers involved in the efforts to help the child, unity of effort is important. The categories offer a ready means of stating certain features of a child's reaction pattern in a more organized manner than listing of symptomatic behavior, and in a manner not yet committed to an assumption or speculation about the psychodynamic organization of the child. The emphasis is directed away from the behavioral symptoms to the nature of the child's efforts to react to his emotions.

The categories are also helpful in defining with the parents the nature of the child's difficulty. Effective work with a parent calls for some accord between the psychiatrist or clinical team and the parent in the formulation of the child's problems. This must be reached in terms which are comprehensible and meaningful to the parent, and which center attention on the emotional aspects of the difficulty (*e.g.* the child's fear, and his efforts to handle it) rather than the troublesome behavior itself.

An openly antagonistic child can be seen as one attempting to act in the face of fear, rather than as primarily hostile or antagonistic to his parents, his friends, his teachers, *etc.* The emphasis is on his underlying

apprehensiveness and uncertainty, rather than his overtly aggressive behavior, which may indeed be reinforced when one reacts to it in kind. The controlling child can be seen as protecting himself rather than being determined to direct and compel the affairs of those with whom he associates. Such an early declaration of the psychological aspects of the child's behavior enables a more constructive initial approach to the understanding of the child, and does not preclude an altered or more thorough understanding of the child's motives and patterned reactions, as work progresses.

If the patterns outlined in the categories can be recognized by other workers, they would be valuable in statistical or research studies. At this point, their chief value will be as a stimulus towards the delineation of groupings, which are applicable in childhood. We have a long road to travel to arrive at a useful classification of childhood disorders. Many of the suggestions that will be proposed will be discarded, but we cannot longer delay efforts to find nosological groupings which incorporate the features of the common disorders of childhood. Especially in the situational reactions, psychoneuroses, personality and character disorders, a refinement of classification is needed with the aim of reaching groupings which have a common acceptance throughout the children's field. The task will not be accomplished by either a single or isolated group of workers. At this point, suggestions for new approaches should be encouraged, as well as critically examined.

The delineation of a syndrome, in which certain psychological features are emphasized, may lead to the recognition of a characteristic developmental or life history. This is illustrated in the manner in which we have developed an increasing understanding of the group of children designated as having circumscribed interest patterns(1).

These children were seen initially as a group who had done well in treatment and who demonstrated withdrawal of a lesser degree than was encountered in early infantile autism, but who had restricted favored interests or activities. They were

not psychotic and the benignancy of the condition was indicated by the relative absence of bizarreness and the usefulness or comprehensiveness of the circumscribed interests or activities.

We recognized shortly that all of such children fell within the category of the actively superficial. Indeed, it was the superficial aloofness which initially concerned the parents. The aloofness was evident in the pre-school years when the child had his earliest opportunities for group experience.

With the development of the special interests, parents were encouraged, and hoped that the children were becoming involved in the activities of those about them. The superficiality or partial withdrawal was maintained. The children socialized to a limited degree. Teachers were troubled about the children when they failed to participate in classroom activities. It was usually through discussions with teachers (school and Sabbath school) and recreational leaders that the parents developed a second period of concern about the child. Referrals were accordingly made between the ages of 8 to 12 years with surprisingly few referrals at earlier ages.

A recognition of these features of the child's psychological make-up and development led to the observation that many of the parents had themselves a superficial or aloof quality. The nature of the child's interests seldom followed those of the parents. Perhaps a reluctance for emotional involvement was necessary to enable an evident social deviation in a child to continue over a number of years. In any event, it has become evident that work with most of the parents of such children calls for a real measure of certainty and direction in the early stages.

We do not know that each of the categories described predisposes toward a certain type of developmental life history. If this were so, the categories would indeed be useful, if empirical, groupings. We are suggesting that a search for syndromal groupings of psychological and behavioral characteristics may be one of the steps which will lead to a useful classification of childhood disorders.

CONCLUSIONS

1. Five descriptive categories of behavior in childhood have been outlined.
2. These categories have proven useful in intra-staff communication, and in the organization of work with parents.
3. These or other groupings of symptoms or behavioral features may lead to the

recognition of clinical conditions, which can achieve general recognition or acceptance leading toward a practical classification of childhood disorders.

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RESULTS OF MENTAL HOSPITAL TREATMENT OF TROUBLED YOUTH¹

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In the study and treatment of troubled youth who have come to the attention of society and its service agencies during the years since World War II, we have selected to review the life histories of 100 young males between the ages of 14 and 19 admitted to The New York Hospital, Westchester Division over a period of 10 years. They represent the consecutive admissions of this age group from 1946 to 1956. The hospital has been called upon to share the responsibility of studying, treating and attempting to restore these young people to a productive and satisfying place in life. Their difficulties have grown more severe as time goes by and the schools and courts have been most cooperative in the arrangements for admission and the treatment and rehabilitation of these young people. This is the first of many studies by the entire medical staff and personnel of the hospital. The aim of this research is to acquire an increased understanding of the problem as it relates to the individual patient, his family, the home, schools, and social environments to which he is restored. Through this understanding, improved methods of management and treatment are being developed.

The average age of this group at the time of admission was 17. Most of them came from small family units: 19 were only children, 30 had only one other sibling. Sixty-three or almost two-thirds were first male children in the family. The pressure to succeed was extraordinary and a source of paralyzing anxiety to many. The families were generally well-to-do with better than average educational and cultural opportunities. There were 50 Protestants, 28 Jewish, and 22 Roman Catholics. There were 54 who showed psychotic reactions in the family history. Twenty-five had parents who were hospitalized for psychoses. These pa-

tients were impressed by the disturbance created in the home and by the separation from the parent. There were only 10 from homes broken by divorce, separation, or death of one of the parents, but over 90% showed a lack of harmony between the parents. The father frequently failed to set a healthy example for identification and in exerting firm leadership. Fathers being away in military service during the infancy and early childhood was most traumatic. While the father was away the mother commonly went to live with her parents and the early home environment was predominantly female. Upon returning from war service where masculine virtues were emphasized, the fathers often gained the impression that their sons were spoiled and effeminate. They tended to enforce a Spartan discipline, sometimes of a cruel nature. Such fathers had not developed any real relationship with their sons. Many commented that they had never felt close to their child; some even doubted the child's paternity. Patients growing up in this situation felt rejected and reacted with a variety of psychopathological patterns depending on their temperament. Feminine identification with exaggerated passive dependent needs was a frequent finding. Upon reaching adolescence this was the source of great conflict. Hostile, rebellious, and even delinquent behavior was often displayed in an attempt to compensate for doubts concerning their masculinity.

Of significant importance was a type of mother who was immature, indulgent and even seductive in her attitude toward the patient. This was manifested in two-thirds of the mothers by prolonging infantile dependence and by too much fondling. Some mothers undressed and bathed before their adolescent sons; others permitted their sons to sleep with them. These mothers and sons were often conscious of the sexual excitement induced. The psychotic symptoms precipitating the hospitalization of many pa-

¹ Read at the 116th annual meeting of The American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

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tients were alternating periods of hostility and erotic advances towards the mothers. Five of these mothers, conscious of their own incestuous feelings, became psychotic and required hospital treatment.

Infancy and early childhood were commonly marked by serious physical difficulties including birth injuries, repeated upper respiratory infections, allergies, feeding problems and operations. These appeared to interfere with normal physical growth and to retard the development of normal healthy relationships with members of the family and playmates. Over 75% were shy, isolated, poorly coordinated and lacking in strong spontaneous feelings. The group as a whole found it difficult to invest interest in their surroundings, school work and group activities.

Although their school work was average in 75%, they were not up to the family standard and felt inferior to other members of the family and classmates. One third of the group had Intelligence Quotients ranging between 90 and 100 while parents and siblings were within the superior intellectual range. Discouragement at their relatively unsuccessful school work was associated with a lack of application, falling behind, and dislike for school. Twenty-five per cent were above average and were compulsive and perfectionistic about their school work. The latter did better in responding to hospital treatment and a greater proportion of these patients recovered.

There was noticeable unevenness in personality development. Being isolated, they did not feel secure in the family group or at school. Over-compensation in preoccupation with unhealthy and impractical intellectual activities along with philosophical, religious and mystical ruminations was common. Many became absorbed in solitary hobbies. Failure in emotional maturing and socialization led to increased withdrawal and a tendency to act out aggressively against parents, teachers and less commonly playmates.

The following case illustrates these points :

John, whose mother became psychotic after his admission and required hospitalization, was born while his father was in the armed services. He had been a quiet, beautiful infant and child,

closely attached to his mother. He enjoyed combing his mother's hair well into his teens and spent hours shopping for "just the right present" for his mother or his aunts. The father declared he had never felt close to, or understood, his son and favored an older sister born several years before the father went into the armed services. In an attempt to make a man of his son he enforced a rigid discipline and wanted to send John to a military school. The mother thwarted this move. At adolescence John suddenly became rebellious to all authority, played "hookey" and was suspended from school on several occasions because of his undisciplined behavior. He joined a gang at 14 and was involved in petty thieving. He adopted the coarse manners, speech, and accent of the so-called "hood" group in his community. When he assaulted his mother and threatened his father with a knife when the latter intervened, he was hospitalized. In spite of his "tough" manner he spent much time preening his hair and admiring himself in the mirror.

The average duration of difficulties of patients prior to admission was 2½ years. The stress of adolescence was an important precipitating factor. At this time there was a strong drive to be independent. They were unable to feel close to anyone and were preoccupied with sexual matters. The illness was precipitated by attempting to adjust to the first year of preparatory school or college in 30 patients. In 10 the illness was closely associated with serious sickness of one of the parents. The first sign of abnormal behavior followed severe virus infections or operations in 15. Ten were disturbed by a move to a new environment to which one or both parents also were reacting with signs of stress. One-third worried that others believed them to be homosexual or feared that they could not control homosexual tendencies in themselves. In their state of insecurity 40 became involved in stealing from their families and in minor pilfering in their neighborhood in an attempt to gain a sense of status or to "rent" friends as one so aptly declared. Only 10 had come to the attention of the law and in all these there was close cooperation with the courts and probation officers.

All were admitted on voluntary status, on their own signature or as voluntary minors on the application of one of the parents. The mental picture was largely that of

adolescent turmoil. Eighty-one were diagnosed as schizophrenia, 66 as catatonic, 8 simple, 6 paranoid, and 1 as hebephrenic type. Ten were diagnosed as psychopathic personality with asocial trends, and these differed from the schizophrenics in their impulsive acting out. They were more aggressive and straightforward in their acts of stealing and aggression, whereas those diagnosed as schizophrenia showed more fumbling and disorganized forms of stealing or impulsive actions. Depressive and suicidal trends were encountered in 35, usually associated with ideas of guilt and preoccupation with a sickly religiosity closely related to concerns over masturbation, homosexuality, sadistic heterosexual fantasies, or fears of losing control.

The schizophrenic reactions were always associated with trends involving projection of homosexuality and delusional thinking. The psychological tests such as Rorschach and other projective tests confirmed the clinical observations and evaluations. Eight were diagnosed as manic-depressive reactions and one as psychoneurotic.

Physically the group was interesting. Mention has been made of physical difficulties in infancy and childhood and how these factors resulted in the development of a weak ego structure, manifesting itself in poor interpersonal relations, little spontaneous interest in the environment, and a lack of commitment to work and play. At the time of admission 50% were poorly coordinated and awkward. Thirty showed some form of allergy, and 25 were undernourished. Of interest was the occurrence of myopia in one-half of the patients, and an equal number had acne, dilated pupils and vasomotor symptoms such as cold, clammy hands, and excessive and odorous perspiration associated with exertion. Only 9 showed abnormal EEG tracings and these were not associated with any particular diagnostic grouping. Two were so abnormal with clinical findings suggesting epileptic equivalents that anti-convulsant medication was administered and proved helpful.

A general disheveled appearance and the tendency to be non-cooperative in manners, clothes, style of hair cut were characteristic. Many of them had long hair which they handled and combed, frequently preening

before mirrors and openly admiring themselves in a vain and effeminate way. At first they resented the structured environment where proper clothes and hair cuts were insisted upon. In their turbulent and rebellious desire to be independent they resisted the program of socialization, good manners and group participation in all activities. The physicians gained their confidence through firm support, psychotherapeutic efforts and consistent insistence upon keeping up to all expected of them in a hospital setting. Women nurses won their respect and created a homelike environment. This has been observed in all hospitals where women nurses have gradually replaced male nurses and attendants, although among acutely disturbed patients the mature male nurse plays an important and necessary role. The relationship developed with male members of the physical education and occupational therapy departments afforded opportunities for healthy male identifications. As this identification proceeded, there was a notable decrease in acting out behavior.

The following is an illustrative example :

John, referred to above, tended to disrupt occupational therapy classes by his rebellious and distracting behavior when supervised by a female therapist. However, he worked productively in printing and the wood shop under consistent and firm male guidance. At physical education he tried to hide his fears of any body contact sports and his general ineptness at athletics by standing on the sidelines making belittling remarks. A younger male physical education instructor gradually gained a relationship with him and encouraged him to develop his chest and upper arm muscles in individual exercises involving the rowing machine, chest weights and the punching bag. He was gradually introduced to ping pong, bowling, and finally group sports such as volley ball and soft ball. He eventually became the catcher on the soft ball team. Coincident with these accomplishments and interests was the gradual development of an improved and healthy relationship with his father.

In addition to skill in athletics, greater emphasis was placed on learning to enjoy group activity with consideration for others and achieving a feeling of belonging and being wanted as a member of the group. Most of these young men are afraid of the

role that must be assumed at social dances and some time is required to reach the point of full enjoyment of these functions. The same is true of group singing, card parties and other social gatherings of mixed groups. In occupational therapy great patience is required to assist them to achieve satisfaction in constructive activity. The same is true in the music and library departments. Many of the patient's reactions on the halls and in the various program therapy departments become topics for discussion in the psychotherapeutic interviews. In psychotherapy the interview method is employed with emphasis on dynamic and interpretative psychiatry. On the basis of a good relationship with his physician the patient is able to review his own personality development and learn better ways of managing in all spheres of his life.

About two-thirds of parents needed psychiatric help. Many on their first contact with the hospital appeared demoralized. At the time of admission they were anxious, sleepless, and overwhelmed by feelings of guilt over being the cause of their son's problems. They typically alternated between sobbing helplessness and loud and hostile berating of the patient for being vicious and ungrateful. Most parents were uneasy in their early relationship with the psychiatrist, misinterpreting questions involved in history taking as indications they were being accused of causing the patient's illness. Parents tended to blame each other for the patient's illness, bickered at home, before staff members, and on occasions even in front of the patient when visiting. All of them were given ample time by the physicians of the hospital and some were referred to psychiatrists in private practice when this was indicated. The Social Service Department was of inestimable value in working with parents. Efforts were directed particularly towards engaging the fathers in the understanding and rehabilitation of the patient.

Much of the acting out and delinquent behavior as well as the exaggerated heterosexual and homosexual concerns noted among this group were directly related to their difficulty in achieving male identifications. The situation was often further complicated by the hostile and rejecting at-

titudes of fathers. Fathers were coached as to appropriate and supporting responses to the patients' symptoms on the background of greater understanding of the meaning of these reactions. Fathers were encouraged to visit their sons without the mother's being present. During the convalescent phase of treatment, visits to sports events, fishing, hunting, vacation trips with the father as well as working together on projects of mutual interest were most helpful in the rehabilitation of patients.

Visits of mothers, particularly during the early period of hospitalization, were frequently limited as they tended to reactivate passive and dependent needs in the patient to which he responded by increased tension and an exaggeration of symptoms. At this time in spite of careful discussion and preparation, mothers often reacted to the psychiatrist as though he were intimating they were the cause of the patient's illness. Mothers felt freer talking to the social worker in a woman-to-woman relationship and could more easily ventilate their concerns with benefit. Reactive depressive reactions were not uncommon among mothers and were occasionally seen among fathers during the early period of hospitalization. Some parents required referral to a psychiatrist in their home area although most all such reactions responded well to regular visits with the hospital psychiatrist and social worker. Five mothers reacted with acute psychoses requiring short periods of treatment in a psychiatric hospital some time during their sons' hospitalizations. Each of these 5 mothers had openly displayed incestuous feelings towards their sons by such actions as the following: one mother exposed her genitals to the son on the excuse of showing him a bruise on the thigh; a second lay on top of the son in his bed while treating his facial acne; three others slept with the adolescent son. All these mothers were well aware of their incestuous strivings.

The outlook of the patient seemed definitely related to the teachability of the parents by the psychiatrist and social workers. Even among those patients who were unimproved, the parents frequently commented upon the better relationship with

their other children and the improved atmosphere of the home as a result of what they had learned.

In order to relieve suicidal trends and exhaustive states of excitement with poor appetite and sleep, 40 of the patients received ECT in addition to psychotherapy and program therapy. Insulin was used in sub-shock doses in 24 and tranquilizers were used in 15.

As the patients improved, they were moved to more free and open parts of the hospital when they could visit at home and commute to school or work. This transitional period of resuming community activities secured the rehabilitation. Therapeutic contact with patients and their relatives for prolonged periods after leaving the hospital was most helpful. The average hospital residence for the group was nine months.

Results of treatment revealed that 68 were definitely benefited by treatment, and at home, 35 of whom were considered recovered, 20 much improved and 13 improved. Twenty-eight were unimproved. One died of severe diabetes and exhausting excitement shortly after admission. Three patients died some time after leaving the hospital, two who left against advice by suicide and one who had been considered recovered was killed in an automobile accident.

The following illustrative cases are presented :

Case 1 : A 19-year-old Jewish male was admitted to the New York Hospital, Westchester Division on January 4, 1950 on voluntary minor status. For the previous two years the patient was showing increasing dependence on marijuana and alcohol, together with deteriorating social relationships. The heredity was free of mental illness. However, the father was an aggressive business man but anxious and ineffectual in the home. He suffered from bronchial asthma and had been under psychotherapy. The mother was the dominant figure, aggressive and masculine in manner. The patient was the first of two, left-handed and withdrawn as a child. The parents tended to be over-solicitous and over-protective. In school he did well scholastically but poorly socially. He had a number of athletic interests which he worked at diligently and realized considerable success. On leaving home and entering preparatory school, he was introduced to

alcohol and marijuana which resulted from strong identification with an anti-social and Bohemian group. It was during this period that he formed a close relationship with one of his contemporaries in which there was mutual masturbation associated with a fantasy of women with "penises." At the time of admission he was withdrawn, tense and expressed sensations of having a "vagina" and a "bleeding" laceration of the left hand. There were homosexual concerns and great ambivalence towards his mother. The patient had considerable intellectual insight and his attitude in regard to hospitalization was good in that he recognized he had problems and wanted help. Physical status was excellent. The patient remained 6 months in the hospital showing gradual and marked improvement. There was increasing facility and ease in his interpersonal relationships. His family was cooperative and received help in gaining understanding of the patient's needs and as a result there was an improvement in his relationship with his father. He developed numerous healthy male identifications within the hospital setting. On leaving the hospital the patient returned to college and the 10-year follow-up communication with the family revealed that he had made a complete recovery and was leading a successful life.

Case 2 : A 19-year-old male was admitted to The New York Hospital, Westchester Division on September 1, 1950 with a long history of bizarre and impulsive behavior. The patient came from German Jewish and English Protestant stock. In the paternal line there was a suicide and numerous instances of psychoses. The father was a circular manic-depressive and institutionalized during the patient's formative years. The mother, an aggressive and capable person, made every effort to give the patient an adequate opportunity for a healthy adjustment. He was an only child who, during childhood and the latency period, was neurotic, withdrawn and over-weight. In school and socially he was poorly adjusted. During adolescence he was increasingly sluggish, awkward, inadequate and persisted in a strong attachment to his mother. He was in his first year of college at the time of his hospitalization, having previously received many months of psychotherapy. Prior to his admission he became increasingly inadequate socially and his behavior was marked by withdrawal and outbursts of excitement and hostility directed towards the mother. At the time of admission he was vague, circumstantial, delusional and hallucinated. He believed that his mother was keeping his father from him. Physically he was obese with poor coordination. In the hospital he became

increasingly disorganized in his thinking and behavior with periods of excited and impulsive activity. Electro-shock therapy did not reverse the process nor did it aid him in utilizing the therapeutic environment. After 13 months of hospitalization he was transferred to a state hospital as unimproved. The 10-year follow-up revealed that he had continued hospitalized with further deterioration.

SUMMARY

The life histories of 100 young males between the ages of 14 and 19, admitted to The New York Hospital, Westchester Division from 1946 to 1956, were reviewed, with the following findings:

1. The stress of adolescence was an important precipitating factor on a background of inadequate personality adjustment dating back many years.

2. Acting out behavior included stealing, aggressive rebellion against authority, and assaultiveness particularly towards mothers. This behavior was common in both the schizophrenic and psychopathic groups which made up nine-tenths of the patients.

3. Treatment emphasized the importance of dynamic psychotherapy, as well as a well-rounded program directed towards group participation and socialization.

4. Important in treating was to provide experiences to enhance the development of strong male identification.

5. Successful outcome of treatment was related to the teachability of the parents.

6. The results of treatment were given. Two-thirds of the patients were benefited and at home.

DISCUSSION

ROBERT S. GARBER, M.D. (Belle Mead, N. J.).—The paper is intriguing and informative, but the content does not fit the

title since it is not about the treatment of troubled youth, but rather the treatment of psychotic youth, as actually demonstrated in 89 out of the 100 cases. It would be extremely interesting to know how the recovery rate reported (*i.e.*, 33 out of the 100 cases were not improved), compares with the recovery rate for adults or children of other age groups, and especially, since this group comes from a favorable socio-economic milieu and has good intellectual endowment. It is reported that school work was average in 75%; however, the school work of delinquent youths never attains 75% average in any group.

The important fact in this paper is that much of the illness seems related to separation from parents, both physically, that is, in going off to school, and emotionally, that is, in the phase of adolescence; and that the youths were most helped when their families were simultaneously provided treatment in resolving their own problems as well as in their problems of relationship with their children. This raises a basic question of prevention. The histories described are full of signs and portents of a precarious balance in adjustment for most of their lives.

Physical illness, neurological implications, accidents, personality problems, difficulty in relationships are all present. Actually, the paper points out the need for earlier detection and treatment, at a period in childhood when the parental role in the illness is both clearer and more easily reversed, when both parents and child are more accessible, rather than in adolescence.

Finally, in general, the paper reads like a good program, although not designed to treat those youths who are actually coming into conflict with society.

A COMPREHENSIVE HOSPITAL-COMMUNITY SERVICE IN A STATE HOSPITAL¹

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This is a report of early experiences with a project to organize within the Hudson River State Hospital a comprehensive and integrated treatment service for the mentally ill in a defined population under a research design to evaluate results.

There has been set up within the hospital structure a sub-hospital—a largely complete and autonomous service unit—specifically serving Dutchess County, New York. This unit provides a broad range of treatment services which include pre-care; day hospital, night hospital and inpatient care (both acute and long term); rehabilitation services; and aftercare.

RATIONALE

The rationale of this project is as follows:

Our culture is burdened with an enormous load of disability associated with psychotic illnesses. Our present methods are not very effective in preventing or curing the illnesses, but we do now have the tools to attack the associated disability. We can relieve much of the disability which has already occurred; we can prevent its future occurrence and minimize its extent.

Our tools for preventing and reversing disability are much better than our organizational structure for bringing the tools to bear upon those that need help. Nowhere in the United States has any population been given comprehensive service which uses all the tools that we now have.

We have a tradition in our society of almost automatically hospitalizing persons with psychoses; also a tradition and current practice of not using community psychiatric facilities for the seriously ill. It sometimes appears that the richer a community is in its health, welfare and psychiatric facilities—

as in large metropolitan centers—the more difficult it is to bring these to bear to help the seriously ill person.

Hospitalization as such is among the causes of disability. This is especially true of the traditional, highly security-conscious hospital.

Even where we have a great wealth of services available and a willingness to use them, it is often difficult to get flexible continuity of care for the individual patient because the services are so independent of each other. This happens even in a single large organization; when it becomes as large as the Hudson River State Hospital it almost inevitably develops specialistic compartmentation, so that patient care tends to become fragmented.

The major hypothesis to be tested in this pilot program is that chronic hospitalization and disability can be reduced by supplying the population with a comprehensive psychiatric service based upon a small, community-oriented, open public mental hospital so organized that there is maximum continuity of care over both inpatient and outpatient phases of treatment.

LOCALE

The population served by the project resides in Dutchess County, one of the 8 counties served by the Hudson River State Hospital. It is a mixed urban-suburban and rural area of about 170,000 people. They are relatively well disposed toward their state hospital and have responded well to such innovations as the open ward system. They make liberal use of the hospital and for several years Dutchess County has had the highest admission rate of all the counties in the state, the annual rate being nearly 300 per 100,000 of population.

With the help of state aid the county supports an all-purpose psychiatric clinic. This gets more referrals for emotional and adjustment problems than it can handle, and tends to refer the more seriously ill to the

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state hospital. There are no psychiatric beds or outpatient clinics in any of the general hospitals in the county. There are a few psychiatrists in private practice.

The Hudson River State Hospital is on the outskirts of the city of Poughkeepsie, the largest center of population in the county. Most of the county's residents are within half-an-hour's drive from the hospital. The hospital's patient population of 5,400 is housed in a large number of buildings spread over 1,000 acres.

The parent hospital is organized in the traditional American pattern with specialized wards and buildings for specialized functions. There is one central reception service into which all new admissions come, and specialized buildings for the infirm, the regressed, the disturbed, and diabetics or others needing special diets.

The staffing pattern is standard for New York State, with the reception service at APA standards and the continued treatment services somewhat below APA levels. There is active treatment and rehabilitation in most of the hospital and over 90% of the patients are on open wards.

There is an aftercare program which uses traveling clinics and also field social workers. Social work positions are allocated in accordance with the number of patients in extramural care which presently number about 900.

The presence of a day hospital as part of the state hospital is an almost unique asset, being one of two pilot projects set up by the Department of Mental Hygiene 4 years ago. It receives most of its referrals from the community and has won excellent community acceptance.

PROJECT

The "Dutchess County Unit" has been established in two small buildings, with a combined bed capacity of 550, which are contiguous to each other and to the medical-surgical-reception building which also houses the day hospital. Over a period of several weeks in the fall of 1959, Dutchess County patients from the continued treatment services were moved into these buildings while non-Dutchess County residents were moved out. About 85% of all Dutchess County patients have been assembled in

this unit, and it is expected that the unit will eventually care for virtually every patient from the county.

Since January 12, 1960, all Dutchess County admissions have been admitted directly to the unit. The reception service patients from the county had been moved in a few days before, together with professional staff, stenographers, files, *etc.* Since then the unit has been in operation as a virtually complete and self-contained small hospital with its own reception and intensive treatment service, a full range of long-stay patients, including the infirm and the regressed, and its own aftercare service. Close working relationships have been established between inpatient, day hospital and aftercare functions with free referral between them. The only Dutchess County patients deliberately excluded from the unit are the tubercular and those with acute medical or surgical conditions. Patients in the unit needing specialized services go across the street to the medical-surgical building for x-rays, physiotherapy, dental work, *etc.*, to avoid unnecessary duplication of facilities.

The entire unit is "open" with all wards unlocked during the day. The unit has been staffed for carrying out standard functions with standard numbers of personnel. Physicians, social workers, a psychologist, nurses and aides, have been allocated as equitably as possible on the basis of the unit's patient load and rates of admission. Every effort has been made to avoid especially favoring the unit in number or quality of staff.

What has been described up to this point is simply a new method of organizing and administering present services with nothing particularly new in the services themselves. The one new function which is in process of being added is "pre-care." This we conceive as an emergency psychiatric consultation service to the community. Those who commonly initiate moves toward hospital admission, such as physicians and police, are being encouraged to first give us a call when they have a patient for whom admission is contemplated. We will send a consultant to the home, if necessary, or see the patient in the office. We believe that this procedure can often give better service to the patient without hospitalization, by

recommending certain treatment measures to the family physician, by referral to a psychiatrist or clinic, by placement in a nursing home, or by admission for day or night hospital treatment. It is also expected that those patients who are admitted for full-time hospital care will, through this advance medical contact, have a healthier relationship with the staff and make greater use of voluntary admission procedures.

The provision of this new pre-care service will require additional staff and the creation of the new positions has been made possible by a grant from the Milbank Memorial Fund.

At this point it should be emphasized that the entire Dutchess County Service is for the mentally ill for whom hospitalization appears to be in the immediate offing. This distinction is necessary both to keep the unit from being inundated with less serious problems, as well as to define our role as not competitive with the outpatient clinic or with psychiatrists in private practice.

The success of any such venture into community-based psychiatry is in large measure dependent upon community understanding and involvement. Beginning with the earliest planning stages a year before the opening, conferences were held with various community leaders. There have been many conversations with individuals and groups, and several open meetings to clarify issues. Especially helpful cooperation has been given by the county's Community Mental Health Board, and by an *ad hoc* committee of the County Medical Society set up to study the plan.

RESEARCH

It is assumed that this new organization of psychiatric care is better than that we now have. We are sure that staff, patients, relatives and community agencies prefer it; no research is needed to tell us that.

We also believe that patients will become permanently hospitalized less often, will deteriorate less frequently and severely, and will maintain their social functioning at a higher level. To know whether or not the new program will produce these changes requires systematic data-gathering and analysis.

As far as we have been able to determine,

no system or organization of psychiatric services has been sufficiently well studied for us to be confident that it benefits patients more than another system. It is our intent to try to answer this question. Responsibility for these studies is assumed by the technical staff of the Milbank Memorial Fund. This staff has re-formulated the statements about the ways in which the course of psychotic illnesses may be improved by the new unit as follows.

Hypotheses to be tested :

1. That there will be fewer instances of long-stay hospitalization for psychosis than there would have been without the unit.

2. That episodes of psychotic decompensation in chronic psychoses will be less severe, and will be less frequently associated with deterioration and social disability.

3. That more Dutchess County residents who were on long-stay services in the hospital in October 1959 will be rehabilitated to the extent of being able to leave the hospital.

4. That even those who were long-stay patients and who do not leave the hospital will come to function at a higher level and be less deteriorated than if the unit had not been established.

These 4 hypotheses are in process of being tested. We are trying to think out logically and systematically what evidence is needed to test each of them. There are not many ready-made investigative tools available.

Because space does not permit detailed description of the entire research design, we will illustrate only the approach to the first hypothesis. It is necessary to specify both what is meant by "long-stay" hospitalization and the measurements of its occurrence, so that we can determine whether or not it is becoming less common. The specified measure of "long-stay" hospitalization is *continuous* hospitalization for a number of months. Leaving the hospital on convalescent status is regarded as leaving the hospital and not as staying in the hospital. It is not clear how many months of continuous hospitalization should be regarded as "long"; it may lie somewhere between 4 and 20. It is well known that the frequency of shorter periods of hospitalization

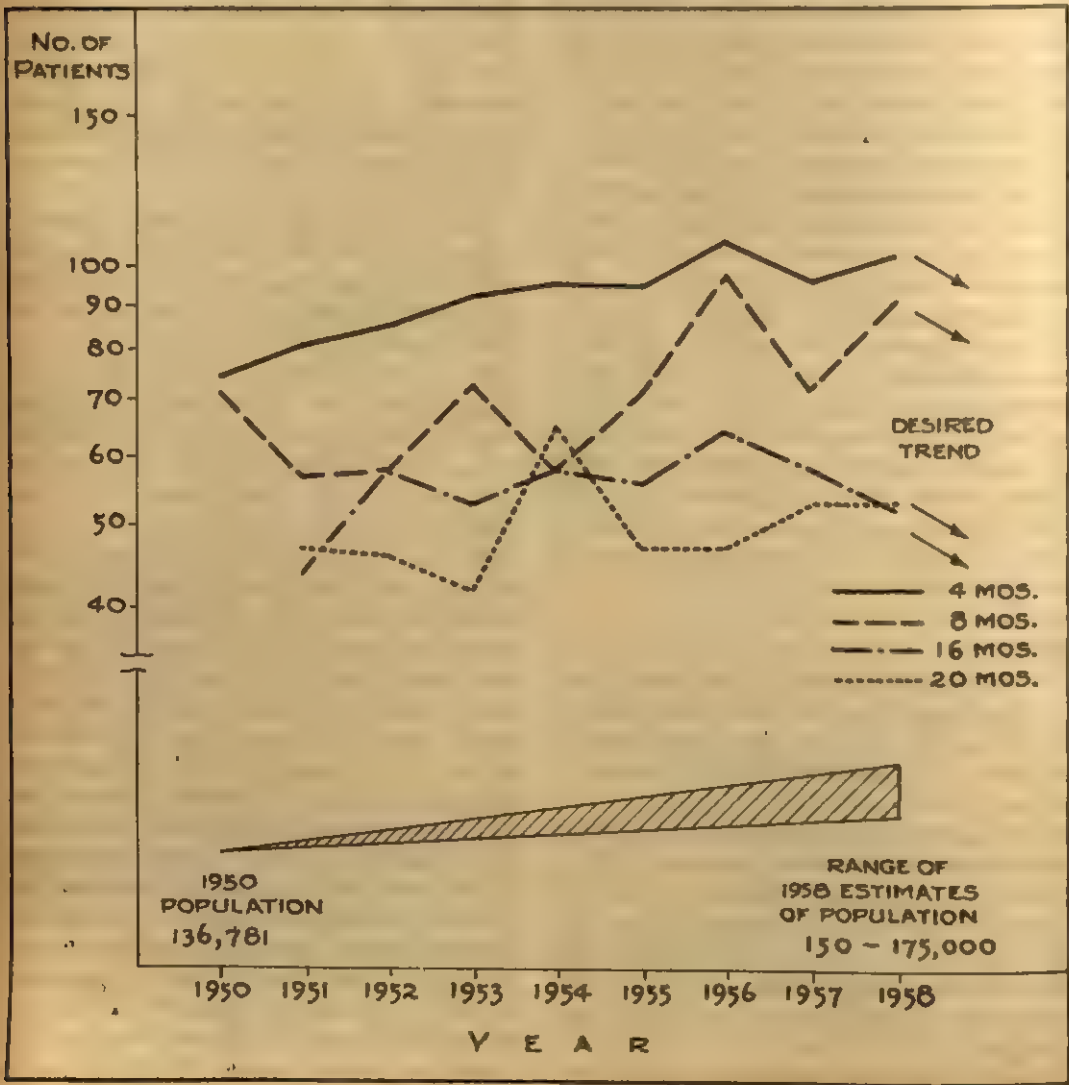
does not determine the frequency of long-term hospitalizations ; the number of such short-term admissions and readmissions may even rise as a result of the unit's activities.

One measure which has been selected is the frequency with which individuals in the county experience their first long stay. This number has been determined for each of the past 10 years to get a picture of its size and stability from year to year. These frequencies are presented in Graph 1.

Each line reflects a different definition of "long stay." If 4 months is regarded as

a long-stay admission, the top line shows the number of people from Dutchess County who have completed a stay of 4 continuous months for the first time in their lives, for each of the years 1950-1959. The bottom line shows the number if 20 months is regarded as "long stay." The curves in between show what is found if we use definitions of long-stay intermediate between 4 and 20 months. The arrows indicate the direction these curves will have to take to justify a conclusion that the unit has made the expected difference.

GRAPH 1
NUMBER OF DUTCHESS COUNTY PATIENTS EXPERIENCING SPECIFIED DURATION OF CONTINUOUS HOSPITALIZATION FOR THE FIRST TIME, BY YEAR



Similar curves will also be made for residents of other counties in the hospital's service district. Likewise, for comparison, these curves will be made for some counties near other mental hospitals. If these others fail to show a decline and if Dutchess County does (assuming no marked changes in population), we will be able to draw some conclusions. While it cannot be predicted with confidence that clean-cut findings will emerge, at least a forward step will have been taken toward better evaluation of changes in the organization of psychiatric care.

The methods being used to test the other 3 hypotheses will be reported elsewhere.

RESULTS

It is much too early to draw conclusions from the brief experience to date, but a few observations seem worthy of mention. The most obvious and striking immediate change is in staff attitudes, with an almost universal excitement and intense dedication to their work. Some might regard this as a contaminating artifact in the project but we consider it a *predicted* result of the administrative decision, and a verification of our assumption that a better organizational structure will produce better staff performance. Without doubt, the staff enthusiasm is in part due to pride in having been chosen for the project, but we believe that the structure itself evokes emotional identification with the small unit which is peculiarly their own. On their own initiative the staff have instituted several new treatment and rehabilitation activities; they are trying to do so much that they complain of not having enough hours or enough hands to do all they want to. All of the staff are delighted with the ease and flexibility of decision-making in the small unit; communication is immediate and face-to-face without the lengthy chain of command which can be so frustrating in a larger organization.

The unit is too small to permit classifying the patients into homogeneous ward groupings. This obstacle to traditional practice reinforces our conviction that it is better for

the patients if they are in heterogeneous groupings. Two infirm wards, one male and one female, are the only wards in the unit which house just one type of patient. There are no reception wards as such: new patients are admitted to any one of the 6 wards all of which also have long-stay patients. Patients who were transferred to the unit from homogeneous regressed wards have been scattered through all wards. With rare exceptions, these regressed patients have responded quickly by becoming more alert and tidy. There is a steady trickle of long-stay patients improving and leaving the hospital; in the first three months some 30 patients who had been in hospital over a year were released, thus freeing beds for remaining Dutchess County patients to be moved in from other parts of the hospital. The early trend is in the direction of a reduced hospital population, although the number of admissions is higher than ever.

There appears to be a significant increase in voluntary admissions; in the first 3 months half the admissions were voluntary. There is also a steady increase in self-referrals to the day hospital, and the success of this service is creating a heavy demand for an evening hospital which will give active treatment during the evening hours. This latter service is not yet in being, but is planned for a later date when staff may be available.

SUMMARY

A newly organized, 550 bed hospital, rendering comprehensive, psychiatric care (day hospital, night hospital, post-hospital, pre-hospital and consultation) to residents of Dutchess County, N. Y., has been created within the 5,400 bed Hudson River State Hospital. This is designed to give continuity through close integration of a wide variety of treatment services. Early experiences with the project are reported.

Evaluation studies are testing the hypothesis that this type of service will reduce the frequency and severity of disability associated with mental illness, as measured by rates of admission, institutionalization, and deterioration.

PROBLEMS IN THE CORRELATION OF PSYCHOPATHOLOGY WITH ELECTROENCEPHALOGRAPHIC ABNORMALITIES¹

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INTRODUCTION

The application of computer techniques to the examination of the electroencephalogram has evoked a great deal of interest. This interest results from the desire to further quantify, to dissect features in the EEG that may not be apparent to simple visual inspection. In the jargon of communication engineering: there is a great deal of "noise" in the electroencephalogram. Potential change appears in a pseudo-sinusoidal fashion that must be treated currently as "noise" because no meaningful signal appears to have been transmitted. Traditional visual inspection has contributed information that is quite helpful in a clinical setting, but it is only a rough summary of many potential "bits" of information.

Frequency analysis in various forms has been available for nearly 15 years. The EEG can be converted into a histogram based on the frequencies but in spite of the availability of such quantifiable data, few reports have appeared correlating frequency analysis with psychological data. Some of the major disadvantages are the loss of phase relationship, the inability to analyze more than one channel at a time, and the long time periods required for the analyses.

A technique which is more recent and is rapidly gaining in popularity is correlation technique, both auto and cross. A complex series of electrical changes making up the electroencephalogram is electrically correlated with itself displaced in time, or to another known and simpler series of wave forms. These techniques are very sensitive for the detection of rhythmical repetitive events marked by ongoing activity—such as evoked responses from a flashing light—but do not offer as much toward the further analysis of non-repetitive electrical activity.

Up to now, attempts to correlate EEG abnormalities with psychiatric syndromes have resulted in a notable lack of success and a great deal of confusion due to the many conflicting reports. At first it seemed to us that the problem lay in the lack of refinement in EEG interpretation based on visual inspection, and that once computer techniques became available, the relationship between psychopathology and the electrical activity of the brain would begin to manifest itself.

Recently, however, we have begun to realize that the problem lay not only in the interpretation of the EEG, but also in the evaluation of psychopathology.

For example, we recently attempted to discover if there was any characteristic behavioral or emotional pattern associated with 14 and 6 per second positive spiking in the EEG. It has been reported that children with such an abnormality, while often giving the appearance of model children, are subject to periods of impulsive aggression and may even commit murder. Our study(1), which was carefully controlled, failed to confirm the clinical observations made by others. We found no difference in aggression and impulsive behavior between these children and the control groups. While we felt that we had done as good a job as was possible with the research techniques available, certain defects in these techniques became evident.

In spite of these difficulties, we do feel that such studies should be attempted. Uncontrolled studies are almost completely worthless. We thoroughly deplore the publication of studies which state that "abnormal EEGs are found in such-and-such a percentage of disturbed children or schizophrenics or what-have-you." Blind control studies are essential, with criteria for EEG abnormality and behavioral abnormality thoroughly described.

Specifically, in terms of the 14 and 6 abnormality, almost all the work published

¹ Read at the 116th annual meeting of The American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

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on this subject has reached premature conclusions regarding the significance of 14 and 6 per second positive spiking. These reports have been characterized by absence of control groups or poorly conceived controls, with vague descriptions of the criteria for EEG abnormality and practically no understanding of the complexities of behavior.

Perhaps one reason that investigators have shied away from more careful studies is the difficulty in evaluating and measuring behavior. This is the problem we ran into with the children in our study. We examined these patients by thorough psychiatric, psychological, and neurological examinations. Our problems arose when we attempted to quantify such factors as aggression, hostility, and impulsiveness. Accurate measures were necessary in order to compare the children who had the 14 and 6 per second spiking with the control groups. Similar difficulties arose in all areas—psychiatric, psychological, and neurological.

PROBLEMS IN PSYCHIATRIC EVALUATION

It became evident to us that it is not possible to quantify personality characteristics by means of psychiatric evaluation, except in a very gross way. For example, it might be stated that an emotionally disturbed boy "had a problem handling his hostility." This phrase can be applied to many disturbed persons, regardless of cause. When you are attempting to distinguish differences in the pattern of aggression among disturbed children, such a gross description is extremely inadequate and frustrating.

This problem is not unique to this type of study; the search for specificity has been unsuccessful in all areas of psychiatry. In evaluating acute schizophrenics, for example, it was formerly thought that the psychotic verbalizations were directly related to the etiology. When a schizophrenic heard voices accusing him of wanting to kill his wife it was assumed that his "problem with hostility" was significant in causing the psychotic break. We now realize that the things which schizophrenics are accused of by their voices are extremely stereotyped. This can be useful in psychotherapy; an omnipotent role can be assumed almost immediately with a new patient by describing

the content of his hallucinations to him, much to the patient's amazement. The point is that *all* disturbed patients are bothered by hostile impulses, as well as other types of emotions, and the disturbed children in our study were also losing control of these impulses.

We were trying to find something unique about a particular group of children with a certain EEG abnormality, and were suspicious on clinical grounds that they were characterized by some peculiar, impulsive expression of aggression. However, when mixed in with a group of other disturbed children in a blind examination all groups had high percentages of children with "aggression problems"; attempts to quantify the aggression, except in a very rough way, revealed only our helplessness. Differences in quality were equally difficult to discover.

Since we have this difficulty with such a gross EEG abnormality, how will we handle a refined rhythm visible on the computer?

PROBLEMS WITH ANAMNESTIC MATERIAL AND PSYCHOLOGICAL TESTS

One would expect an emotionally disturbed or aggressive child to be diagnosed on the basis of clinical history, but the problem of further differentiation among types of aggression, so as to delineate an organically driven variety, is extremely difficult. One soon realizes that most symptoms can accompany either emotional or organic pathology. Retardation, temper tantrums, bed-wettings cannot be assigned to a single cause.

Similar difficulties apply to the use of data from psychological tests. Here again the problems of the child in dealing with aggression were revealed, but differentiating subtle differences in the handling of aggression between disturbed children proved more difficult. This is true in projective tests, such as the Rorschach and TAT, as well as on the MMPI.

PROBLEMS IN NEUROLOGICAL EXAMINATION

When the neurological findings are quite gross it is apparent that there is good correlation to other evidence of brain damage. There can be little equivocation concerning the significance of the paretic limb, an ex-

tensor plantar response, or an intention tremor.

It is more difficult and uncertain to evaluate the "soft" neurological signs—a slight clumsiness, minimal changes in the sensory examination, or a subtle reflex asymmetry. Brain damage removed to some degree from the main motor or sensory pathways notoriously may be difficult to detect and will be missed if the "hard" neurological signs alone are looked for. What is obviously needed is a great extension and perhaps quantification of the subtle, minimal, and more elusive findings.

DISCUSSION

These problems are not unique. However, they emphasize the primitiveness of the methods we have available to study the complex human psyche. This is not to belittle the efforts necessary to reach the present level, but rather to emphasize the work that needs to be done.

Often we become carried away by scientific progress which promises to make available all sorts of new information. Hidden EEG patterns which now are discernible have meaning only in terms of human behavior. Attempting correlations with such gross entities as psychosis, schizophrenia, neurosis, or behavior problem will lead to very little which is new or enlightening. Until the "group of schizophrenias" is broken down into meaningful subdivisions, for example, most correlations will be lost. Even a basic separation into schizophrenic reactions and "grown-up" childhood schizophrenics would be helpful, and also possible with our present knowledge.

In terms of studies dealing with attempted correlations between behavior and EEG abnormalities, it is obvious that the significant items are not grossly visible. It is only with some ingenuity and considerable effort that one can hope to pick up more subtle differences.

As an example of a currently useful technique, items which are not significant enough in themselves can be grouped with

other items to form symptom or behavior profiles. In the study described earlier we formulated and used such scales as "aggressive behavior," "organic symptomatology," "emotional symptomatology," and "disturbed mother syndrome." Such scales can be formed with pertinent items from psychiatric, psychological, and neurological examinations, often yielding meanings which could not be seen in the single items.

It is only through further development of more subtle measures that studies in this area can become meaningful. Better methods of quantifying psychiatric and psychological examinations are needed. The development of computer techniques points up the inadequacies of our methods for evaluating behavior and emotional content. It should spur us to meaningful research in this area.

SUMMARY

1. Frequency analysis has been available for nearly 15 years, but its inherent disadvantages have limited its use in correlating the EEG with clinical data. Auto-correlation and cross-correlation techniques are more recent and hold considerable promise.

2. The use of these techniques will add little to our present knowledge unless we also improve our methods of quantifying behavior and psychopathology.

3. Most studies of EEG abnormalities in psychiatric syndromes have little value because of lack of controls and poorly-defined EEG and behavioral criteria. This has been true in studies of the significance of 14 and 6 per second positive spiking.

4. Research should be directed toward developing techniques which will enable us to quantify behavior and emotional impulses in a more accurate and scientific manner.

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THE EFFECT OF PHENOTHAZINES ON THE INTERACTIONAL BEHAVIOR OF SCHIZOPHRENIC PATIENTS¹

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Evaluation of behavioral change in schizophrenics is usually dependent on either subjective judgments of the physician or on the interpretation of verbal material obtained as a reaction to more systematic procedures. To obtain precise information about one aspect of the patients' behavior, we employed the interaction chronograph procedure which provided measurements of the duration and frequency of action. In our formalized interview we obtained laboratory data which enable us to predict the patterns of behavior participated in by the individual in other interactional situations. We hypothesize that upon further analyses of the data, patterns of interaction will become evident which may ultimately prove useful in classifying human behavior. This investigation was based on the hypothesis that interactional patterns would be modified by phrenotropic drugs and this would provide an objective method to evaluate clinical response to psychopharmacological therapy.

By introducing measurements of activity, aggressiveness, initiative, dominance and other factors as defined in the interaction chronograph method we can make specific quantitative comparisons between patients' response to phrenotropic drugs. This paper presents data on the effects of phenothiazines in a group of hospitalized psychotic patients. We have selected a group showing a wide range of activity levels in order to obtain a sample of the hospital population. Through this study, we expect to establish the effects of these drugs on behavior and to demonstrate any uniformities which may be present.

PROCEDURE

Twenty-seven patients were tested by the standardized interaction chronograph

(stress) interview. The timing of their responses was recorded by an unseen observer using a portable interaction recorder. The results were tabulated on the interaction chronograph computer and further analysis was made and is presented, in part, in this report.

The patients were selected from various wards at Rockland State Hospital. They included 12 chronic female patients, 3 acute females, 4 chronic male patients and 8 acute males. None of the patients had any complicating physical disorders nor were any mentally defective.

The standardized interview used has been described in detail elsewhere(1). The only significant difference in the procedure used in this study is that combinations of variables were used to obtain average activity and average maladjustment figures. An initial interview was given to the patients before they received drugs. A second interview occurred between 4 and 6 weeks after the initial interview.

In that paper(1) we described the measurements of action and silence (inaction) which represent basic variables from an operational point of view. To make our measurements comparable with work on animals and earlier publications on interaction(2, 3, 4, 5) we have used the average net difference between action and silences during the base period of the interview. Our hypothesis is that the individual tries to achieve a balance between periods when he cannot or does not talk because the other person is doing so, as against those periods when he is playing the active role. Similarly, we have used what we term an average net maladjustment score. This is made up of the net difference between the length of a person's interruptions, counted as positive, and the length of his latencies to respond, counted as negative. Thus, if the average maladjustment is positive, there were longer interruptions than failures to respond; if

¹ This study was supported in part by Public Health Service Grant MY 2350.

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negative, there were longer latencies. This is based on a second hypothesis: that adjustment is analogous to a servo process and that over-long hesitations in one interval are balanced by a speeding up and the possibility of interruption in the next.

The 27 schizophrenic patients were given one of the phenothiazines: Trilafon (perphenazine), Compazine (prochlorperazine) or Thorazine (chlorpromazine) with the dosage titrated to alleviate the individuals' presenting symptoms. Our experience with the administration of these phrenotropic drugs in man indicates that they have three major types of activity: (a) sedative, (b) increased motor and (c) antipsychotic. The antipsychotic effect is demonstrated by definite behavioral improvement with a significant reduction in aggressive behavior, lessened emotional tension, a decrease in hallucinations and delusions and some improvement in affect.

RESULTS

Table 1 presents the data on the 27 patients and shows that the range of average activity rate in the initial interview was from 5.9 hundredths of a minute (3.5 seconds) to an extreme high of 1112.5 (11.1 minutes). Data indicate that in this series, there are no significant differences in the activity range between men and women. It should be noted also that this series was limited to patients whose base activity rate in the first interview was not negative, that is, the durations of the actions were longer than their silences. Only a relatively small number of patients with negative activity were available and they will be mentioned in the discussion.

Each patient shows a decrease in activity level from the first to the second interview associated with the administration of a phenothiazine preparation. The drop in activity is significant by *t*-test at the .01 level. It should be emphasized that no significant changes on reinterviewing of controls are encountered as Saslow and Matarazzo have demonstrated in a number of studies(6).

The most interesting finding, however, is that the amount of drop from the first to the second interview, given in the third column, is a function of the level of activity

TABLE 1
PATIENTS ON PHENOTHIAZINES—BASE PERIOD
ACTIVITY 1ST AND 2ND INTERVIEW

	Activity Base Interview 1	Activity Base Interview 2	Δ
Females			
Kr	5.92	2.55	-3.37
Th	8.21	5.79	-2.42
Ch	54.70	43.38	-10.32
Ho	68.71	12.52	-56.19
Gu	279.00	-1.42	-280.42
Sa	24.78	14.57	-10.21
Ki	139.50	39.27	-100.23
Wi	38.91	18.88	-20.03
Ro	42.60	39.00	-3.60
Re	26.65	14.59	-12.06
Sp	58.70	53.33	-5.37
Eg	17.31	7.41	-9.90
Pa	961.25	22.14	-939.11
Ry	176.00	29.86	-146.14
Ba	105.50	32.31	-73.19
Males			
De	61.60	9.92	-51.68
Ga	60.00	-117.82	-177.82
Ni	334.00	56.70	-277.30
Jo	238.67	110.75	-127.92
Ha	85.40	23.75	-61.65
Wi	80.33	49.80	-30.53
Co	1112.50	197.83	-914.67
Lo	33.00	21.42	-11.58
Fa	16.43	10.41	-6.02
Cor	150.60	95.20	-55.40
Fo	25.50	19.70	-5.80
Mc	417.80	99.83	-317.97

$N = 27$ Mean = 171.24

Mean = -137.44

$t = 2.872$

Significant at .01 level.

Correlation between Activity Level in Interview 1 and amount of drop after tranquilizer.

$r = -.987$

shown in the initial interview. Calculation of the coefficient of correlation yields a Pearsonian $r = -.987$.

In a series of 27 a Pearsonian r of this magnitude is highly significant at the .01 level. In other words, the results from this series confirm the clinical observations that the greater the activity of the patient, that is, the more hyperactive he is, the greater the effect on his activity as a result of the administration of phenothiazines. The male patient with the highest activity, indicating that he talked on the average of over 11 minutes in a response, dropped during

medication to an average of slightly under 2 minutes. The low activity patients show very minor drops. Figure 1 presents these results in graphic form to illustrate the nature of the correlation.

Table 2 presents the data on the same patients for average net maladjustment. Here the results are not as clear since the significant difference between men and women is in association with the quantitative character of the maladjustment. The 15 women with two exceptions, all show a

drop in adjustment from the first interview and the t-test is significant at the .01 level. On the other hand, the men show no systematic change in their average maladjustment scores from the first interview to the second and if the t-test were used the change would not be significant.

Examination of the figures for the 5 men and 13 women whose net maladjustment is positive (that is, where the durations of interruptions are significantly greater than the latencies of response), indicates a

DROP OF ACTIVITY LEVEL OF PATIENTS ON PHENOTHIAZINES

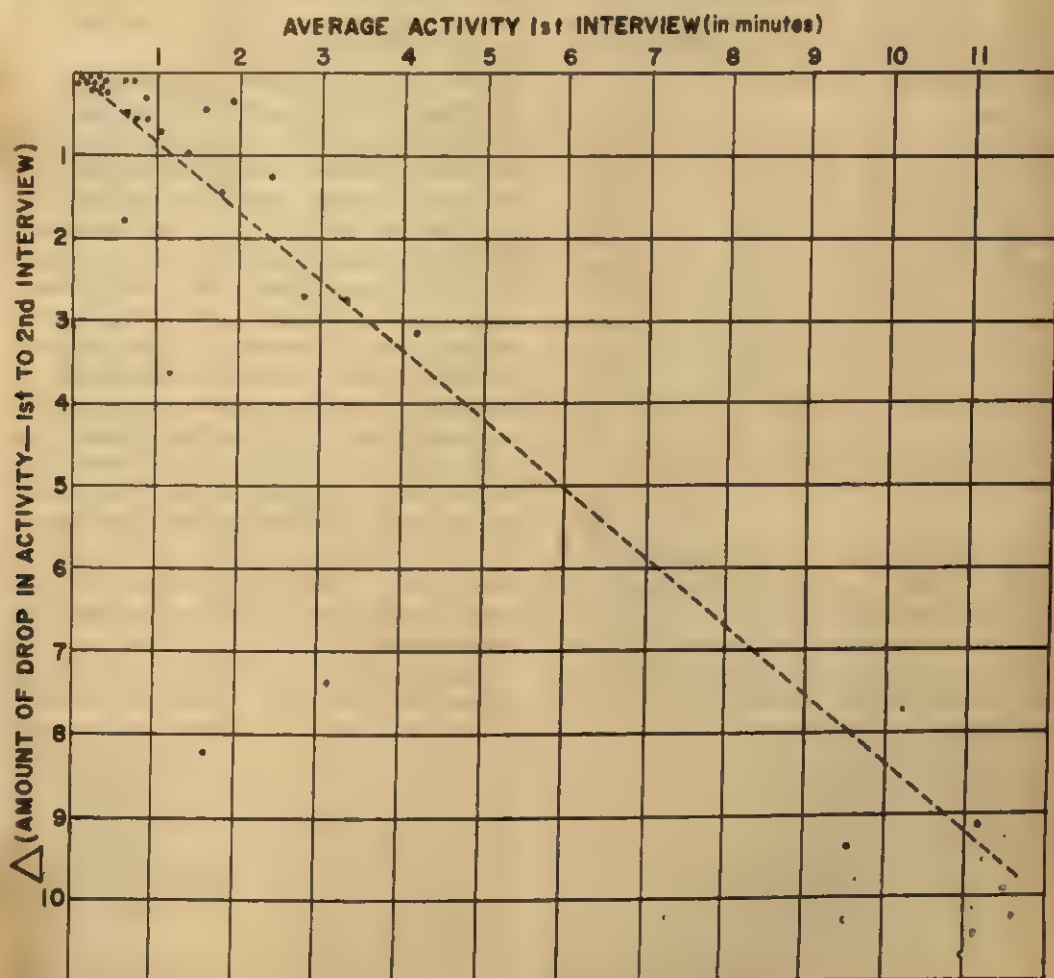


FIGURE 1

TABLE 2

PATIENTS ON PHENOTHIAZINES—AVERAGE NET
MALADJUSTMENT 1ST AND 2ND INTERVIEW

	Adjustment Base Interview 1	Adjustment Base Interview 2	Δ
Females			
Kr	1.58	-.15	-1.73
Th	.21	-.57	-.78
Ch	.70	1.38	.68
Ho	2.86	1.28	-1.58
Gu	-5.00	-6.11	-1.11
Sa	.44	-2.14	-2.58
Kl	1.80	-.45	-2.25
Wi	.17	-2.13	-2.30
Ro	4.70	1.23	-3.47
Re	4.18	2.04	-2.14
Sp	3.30	1.75	-1.55
Eg	0	-2.45	-2.45
Pa	4.00	3.09	-.91
Ry	2.00	1.14	-.86
Ba	-.25	1.56	1.81
$t = 4.12$ significant beyond the .01 level.			
Males			
De	.80	1.36	.56
Ga	.75	-79.55	-80.30
Ni	-8.50	2.20	10.70
Jo	-8.50	-1.00	9.50
Ha	-.40	.75	1.15
Wi	-.17	3.73	3.90
Co	1.75	.83	-.92
Le	1.38	1.00	-.38
Fa	-1.71	.73	2.44
Cor	0	.20	.20
Fo	2.35	1.45	-.90
Mc	0	.50	.50

$t =$ not significant.

drop occurred in 4 of the 5 men and 12 of the 13 women. A larger series and a separation of interruptions from latencies is necessary to determine whether and to what degree differential effects are produced by the phenothiazines on each variable in the components of maladjustment.

It is important to emphasize that the data on activity and maladjustment do not parallel one another but may operate independently. Therefore, one cannot assume that activity level is decisive. For example, male patient Ni. with a 334 activity shows a net maladjustment of -8.5 and although his activity drops significantly in the second interview he becomes much more interruptive and far less latent. On the other

hand, female patient Ry. with an activity of 176 drops substantially in the second interview and also shows a lower value in net maladjustment of 2.0.

DISCUSSION

Much of the work done to evaluate drugs in the laboratory phase of their development involves the measurement of locomotor activity in laboratory animals, usually the rat. Irwin(7) and his associates have shown, using perphenazine, that the locomotor activity of the hyperactive rat is depressed to a considerably greater degree than that of the hypoactive animal. They also found that there were no significant differences between female and male rats in their response to the drug, though in their sample of the species, there was a greater frequency of highly active animals among the female population.

Irwin also emphasizes the importance of knowing the base activity level of the animal studied and points out that evaluation of the effects of drugs can be strongly influenced by the accidental selection of hypo- or hyperactive animals. Interpretation of interaction chronograph results on humans also emphasizes this point. Consequently we need to know the activity level of the individual patient as well as his level of maladjustment (and other variables to be discussed in future publications) before we can properly evaluate the effects of the phenotropic drugs. The higher reliability of the interaction chronograph procedure using the standardized interview, as Saslow and his associates have demonstrated, makes the method of interaction an extremely useful one for psychopharmacological studies(6).

Comparison of experimental animal and human measurements, indicates that the locomotor patterns of activity in the animal have possible analogues in the communicative interactional patterns of the human. In general, one may assume that the two types of activity have physiological mechanisms in common and therefore more precise correlations between animal and human studies would appear possible.

There were a small number of patients placed on phenothiazines whose net activity level was negative. In some of these pa-

tients, phenothiazines increased rather than decreased the net activity. This was probably due to a decrease in silences with little or no change in the relatively brief duration of actions. We do not, however, have a large enough series to come to any definite conclusions; rather, the evidence from this series of patients with activity on the positive side strongly suggests that the duration of actions is what is affected and that the higher the action the greater the drop. Periods of silence (inaction) as well as pronounced latencies appear to be affected in ways which we do not as yet understand. It may be possible to differentiate the behavioral activity of phenothiazines as well as other psychopharmacological agents by the interaction chronograph technique.

CONCLUSION

We have demonstrated that the interaction chronograph interview provides an objective method for determining the behavioral effect of the phenothiazines in schizophrenic patients. This method then contributes in part to the solution of one of the major problems of psychiatry, the evaluation of the nature, direction, and degree of change following therapy. The administration of phenothiazines has been shown to affect specific variables, measurable by the interaction chronograph; the identifiable changes in interaction have been found to correlate with clinical evaluation. The response of the 27 schizophrenic patients to these drugs shows that there is

a significantly high correlation between activity levels and drug effects.

Average net maladjustment drops significantly in the females but not in the males. This appears to be dependent upon a high positive maladjustment (aggressiveness) rather than a sex difference, since most of the males in the series predominantly show marked latency of response. The few males with high positive maladjustment also show drops comparable to that of the females.

The effect of phenothiazines on the interactional behavior of schizophrenic patients has been shown by this procedure. Further analysis of the data suggests that other behavioral criteria will become evident.

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CLINICAL NOTES

(The Clinical Notes report the findings of the authors and do not necessarily represent the opinions of the Journal.)

THE RELATION OF ATTITUDE TOWARD MEDICATION TO TREATMENT OUTCOMES IN CHEMOTHERAPY¹

DONALD R. GORHAM, PH.D.,² AND LEWIS J. SHERMAN, PH.D.³

Several recent articles have emphasized that a patient's response to medication is due not only to the purely pharmacological properties of the drug itself (1, 3, 7) but, rather, is a complex function of the interaction between 3 classes of variables: drug, situation, and person (13). There is a growing body of evidence that the personality of the drug recipient and the total social setting in which the drug is administered are important determinants of a patient's response to chemotherapy (5, 9, 10, 11, 12).

The purpose of this study was to investigate the influence of one of these non-drug determinants, viz., the relationship between a patient's attitude toward medication and his response to a drug. It was hypothesized that patients holding positive, favorable, and enthusiastic attitudes toward drugs would show a greater response than patients not so favorably disposed to this mode of treatment. Indirect support for this hypothesis has been demonstrated by those investigators who found that physicians favoring drug therapy had a greater degree of success than those opposing the use of drugs in treating mental illness (4, 6).

Sherman (14) has recently described the construction of a projective sentence-completion test to measure patient attitudes toward medication. This version of the test is still preferred for the intensive study of individual subjects since it furnishes a rich vein of clinical material. However, for the

large scale research project reported here, a briefer multiple-choice form was developed which yields essentially similar information and is objectively scorable. The 4 completing statements for the stem of each item consist of one which expresses a positive attitude toward the benefits of taking medicine, one a negative attitude, one a neutral attitude and one a statement concerning a side effect. The following are some examples of the test items and their scoring categories:

1. Since I started taking medication
 - A. I have been getting pills. (Neutral attitude)
 - B. I feel sleepy. (Side effect)
 - C. I feel worse. (Negative attitude)
 - D. I feel better. (Positive attitude)
2. I take medication because
 - A. I am forced to take it. (Negative attitude)
 - B. I want to get well. (Positive attitude)
 - C. I want to increase weight. (Side effect)
 - D. This is a hospital. (Neutral attitude)

In scoring, the positive choices were assigned 3 points; the neutral and side effects choices, 2 points and the negative choices, 1 point. A pilot study conducted at Waco and Perry Point VA Hospitals indicated that the scale was within the comprehension of chronic schizophrenic patients and presented no difficulties in administration. About 80% of the 76 patients in the pilot study were able to complete the scale; test-retest reliability on a sample of 45 patients proved to be .79.

The test was completed by 369 patients which was 80% of the number included in Project IV. A factor analysis of the 14 items

¹ Part of Project IV of the Veterans Administration Cooperative Studies of Chemotherapy in Psychiatry (2). Portions of this paper were presented at the Veterans Administration Research Conference on Cooperative Studies in Psychiatry, Cincinnati, June 6, 1960.

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showed that most of the variance was taken out by the first centroid factor. Each of the 14 items had a high correlation with this factor, with 12 co-efficients exceeding .90. For all practical purposes, then, the total score of the scale is a valid single index of the patient's belief that medication will improve his psychiatric condition.

In the main study, psychiatric interviews using the Inpatient Multidimensional Psychiatric Scale (IMPS) (8) and ward observations recorded in the Psychotic Reaction Profile (PRP) (9) had been gathered at the beginning and end of the 20 week treatment period. These scales had been keyed to yield the following 17 symptom measures :

IMPS; excitement, paranoid projection, disorientation, agitated depression, perceptual disorganization, motor disturbance, hostile belligerence, withdrawal, grandiose expansiveness, conceptual disorganization.

PRP; thinking, disorganization, withdrawal, paranoid belligerence, agitated depression, resistiveness, dominance, activity level.

RESULTS

The hypothesis that the attitude of patients toward their treatment is related to treatment response as measured by these 17 criteria was tested for the patients in Project IV. When all patients were considered, without taking into account differential drug treatment, there were no statistically significant relationships. In other words, for these 369 patients, changes in symptom areas were not related to patient belief in the efficacy of medication.

When the patients were considered by drug groups one relationship statistically significant at the .01 level and three at the .05 level appeared. Since the 17 factors were analyzed separately for 5 drug groups making a total of 85 statistical tests, these 4 significant relationships are about what might be expected by chance. It should be noted, however, that these 4 relationships were all in the expected direction; i.e., symptom relief was related to positive attitude toward medication.

The relationships between attitude toward medication and pre-treatment symptom measures were found to be statistically

significant (.01 level) for 6 of the criteria: IMPS; paranoid projection, perceptual disorganization, hostile belligerence and conceptual disorganization, PRP; paranoid belligerence and resistiveness. This cluster of factors which approximates the paranoid syndrome of symptomatology suggests that the more paranoid the patient, the less faith he has that he might be helped by medication.

SUMMARY

An Attitude Toward Medication Scale was administered before and after treatment to 369 patients in a large-scale chemotherapy study. The hypothesis that the attitude of patients toward medication has an important bearing on treatment effect was not upheld with this population of chronic, apathetic schizophrenics. Medication attitude, however, was significantly related to a cluster of symptoms that tend to characterize paranoid schizophrenics indicating that the more paranoid the patient, the less faith he had that he might be helped by medication.

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THIORIDAZINE HYDROCHLORIDE¹ IN THE TREATMENT OF BEHAVIOR DISORDERS IN EPILEPTICS

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AND ROGER G. OSTERHELD, M.D.²

The treatment of behavior disorders in epileptics constitutes a difficult problem, especially in institutionalized patients. These disorders include hyperactivity, aggressiveness, irritability, stubbornness, temper tantrums and destructiveness. Mental deficiency often accompanies or follows epilepsy and represents a significant feature of the behavior pattern evidenced by these cases.

Preliminary observations in a small group of patients indicated that Mellaril exerted a beneficial effect on behavior disorders and prompted us to undertake the full-scale evaluation reported here. For this purpose, 100 patients were randomly selected from the adult and pediatric services of this hospital for epileptics and treated with Mellaril for periods ranging from 3 to 10 months.

Dosage was titrated as much as possible in each case, starting with 10 mg. daily in children and 25-50 mg. daily in adults, and increasing by similar increments until optimum effect was obtained. Maximum dosage was 150 mg. daily in children and 600 mg. daily in adults. Blood counts were performed before, during and at the close of this study. Periodic examinations were made to detect any untoward reactions, while disturbances and seizures were recorded on each patient's chart as they occurred.

RESULTS

Analysis of the patient's behavior patterns at the conclusion of the study revealed the following: markedly improved, 61; moderately improved, 28; no change, 11.

¹ Mellaril, Sandoz Pharmaceuticals.

² Respectively: Staff Psychiatrist, Clinical Director, and Superintendent, Monson State Hospital, Palmer, Mass.

Criteria for assessment included ward behavior, number and degree of temper tantrums and manageability. Those rated markedly improved became generally more sociable, friendly, easily manageable and free from destructive behavior patterns. A rating of moderate improvement was applied to those showing a reduction in incidence and degree of behavior disorders, but not complete control thereof.

It became evident during the course of the study that convulsive seizures were also being influenced and an analysis of the patient charts showed:

No seizures after the institution of Mellaril therapy, 23 patients

Decrease in number of seizures, 41 patients

No change in number of seizures, 20 patients

No seizures before and during administration of Mellaril, 16 patients

Increase in number of seizures, 0 patients

Total, 100 patients

No alteration in blood counts, red, white and differential, was encountered in any patient in this series, nor was there any evidence of jaundice, extrapyramidal symptoms, photosensitivity or dermatitis.

DISCUSSION

Zarling and Hogan's(1) report that Mellaril is effective in the treatment of behavior disorders led to the study described here. Considerable improvement in behavior was obtained with Mellaril, but equally significant was the increased control of epileptic seizures. This was unexpected in the light of reports(2, 3) that other phenothiazines appeared to have an epileptogenic tendency. Rather, our study revealed that seizures did in fact decline as behavior disorder

ders were controlled. Since Mellaril does not itself demonstrate anticonvulsant activity (4) its effect on seizures must be ascribed to the reduction of hyperactivity and emotional disturbances which serve to trigger convulsive attacks. Anticonvulsant medication was maintained throughout and must be considered indispensable in the treatment program for such patients.

SUMMARY

Mellaril was evaluated as treatment of behavior disorders in 100 epileptic patients in a study extending over a period of 3 to 10 months. Marked improvement in behavior was achieved in 61 patients and moderate improvement in another 28 patients.

An unexpected consequence was the concomitant reduction in epileptic seizures, 64 of the 100 patients exhibiting no or fewer convulsive attacks during the administration of Mellaril. This provides tacit evidence that control of the emotional factors can exert a beneficial effect on seizures. However, it is emphasized that specific anticonvulsant medication was continued throughout the course of this study.

Repeat examinations failed to reveal any signs of jaundice, photosensitivity, blood

dyscrasia, extrapyramidal stimulation, or dermatitis.

CONCLUSION

This study has shown that Mellaril is an effective agent in the treatment of behavior disorders in epileptic patients and that relief of these also results in a reduction in convulsive seizures. Its usefulness was enhanced by the absence of untoward reactions within the dose ranges which were used in this evaluation. These findings suggest more extensive investigation to determine its potential in the total rehabilitation of epileptics.

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METHOXYDONE (AHR-233) IN HOSPITALIZED NON-PSYCHOTIC PATIENTS

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A double blind study³ of 5-(o-methoxyphenoxymethyl)-2-oxazolidone, AHR-233 and inert placebo was conducted to study the former's alleviation of signs and symptoms in non-psychotic hospitalized psychiatric patients. Methoxydone is a muscle relaxant which may have selective action for states of marked tension, anxiety and agita-

tion with depression, in hospitalized mental patients with chronic or acute psychoses.⁴

All male psychiatric patients admitted to a general hospital over a 6-month period who met the following criteria were entered into this investigation: age under 55, not psychotic, no organic brain syndrome, intelligence high dull normal or better, and medically cleared for study. Experimental (SS) and placebo (KK) groups were initially matched patient for patient according to the degree of anxiety as measured by the Taylor Manifest Anxiety Scale. Two evaluation instruments were used. One, the aforementioned Manifest Anxiety Scale, was a questionnaire which reflected somatic, behavioral, and/or psychic symptoms of anxiety as perceived by the patient within him-

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³ These data were gathered at Albany Veterans Hospital where methoxydone was kindly supplied by A. M. Robins Co., Inc.

⁴ Denber, H. C. B. : *Am. J. Psychiat.*, 115 : 360, Oct. 1958.

self. The second, an observational Clinical Psychiatric Rating Scale amenable to quantification, was completed by the patient's hospital psychiatrist from his knowledge of the patient as gained through interview, observation, and discussion with ward personnel. On this rating scale the patient was scored 1 (Absent), 2 (Minimal), 3 (Moderate), 4 (Strong), or 5 (Marked) for each of the following: Anxiety and/or Tension, Depression, Sleep Disturbances, Excitability and/or Emotional Instability, Suspicious-Sensitive, Hostility, Overinhibited-Rigid, and Inability to Concentrate. These part scores were summated to give an over-all total pathology score. The items were initially selected as having some relationship to the kind of symptom or sign which methoxydone might be expected to alleviate.

Evaluations on the Manifest Anxiety Scale and the Clinical Psychiatric Ratings were made pre-drug (1-2 days before medication was started); 3 weeks after medication was begun; 6 weeks after medication was begun, at which point it was discontinued; and 2 weeks following discontinuation. Methoxydone dosage was 400 mg. t.i.d.

Placebo was administered in similar form and frequencies. No toxicity signs were observed for methoxydone, nor were there any side reactions later traceable to that drug. The technique of paired matchings was employed for the statistical analysis of results on each instrument. The results for the Manifest Anxiety Scale are based upon sample size $N=14$ in each of the two matched groups SS and KK, while the results for the Clinical Psychiatric Rating Scale are based upon $N=16$ for each of the two matched patient groups.

Results revealed similar outcomes for the experimental and control groups on the Manifest Anxiety Scale scores and on the Clinical Psychiatric Rating Scale total pathology scores. Both groups improved through hospitalization *per se*. But there was no evidence that methoxydone speeded recovery or alleviated signs or symptoms any more effectively than did placebo. A separate analysis made for the "Anxiety" part-score of the Clinical Psychiatric Rating Scale gave no better outcome. Hence, for this non-psychotic sample under these conditions and within these dosage limits methoxydone proved to be ineffective.

HYPOTENSION ASSOCIATED WITH THIORIDAZINE HCl

DAVID W. SWANSON, M.D.¹

Hypotension has been an undesirable effect in the phenothiazines. This has ranged in magnitude from circulatory collapse to mild complaints of faintness.

Thioridazine HCl (Mellaril) has been reported to be superior because of the low incidence of side effects and toxicity (1, 2). The following case reports indicate hypotension is an exception that must be considered in this therapy.

Case No. 1: This 30-year-old normotensive man had received chlorpromazine, 600 mgm. daily, in January without any side effects. He had no positive allergic history. In March he was begun on thioridazine 50 mgm. t.i.d. One hour after the second dose he staggered into the hall appearing pale and fell to the floor

striking his head. His blood pressure was 88/50, pulse—60 and his arms appeared "blotchy." A hypersensitivity reaction was considered. Twelve hours later upon assuming the upright position his blood pressure was 84/56, the pulse thready and return to bed was necessary. One week later he began receiving prochlorperazine which was tolerated satisfactorily.

Case No. 2: A 25-year-old woman with a blood pressure of 120/70 on admission showed a diminished pressure on thioridazine 25 mgm. q.i.d. (90/60). After 24 hours on 50 mgm. q.i.d. she complained of being weak, dizzy, nauseated and faint. At that time the blood pressure was 60/0 and the pulse 60. This patient demonstrated objective hypotension on other phenothiazines also.

Case No. 3: A 19-year-old girl received thioridazine which was gradually increased to 100 mgm. q.i.d. and then began complaining of

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"feeling weak and dizzy." Almost daily her medication had to be withheld once or twice because of hypotension (90/54 to 72/50). When the dosage was reduced to 25 mgm. t.i.d. her normal pressure of 120/75 returned.

Case No. 4: This was a 31-year-old normotensive woman who became persistently hypotensive (90/60) on thioridazine 50 mgm. t.i.d. This was also noted when she received prochlorperazine 25 mgm. b.i.d. (86/60). She had no subjective complaints referable to her decrease in pressure.

Case No. 5: A 44-year-old woman showed no indication of side effects during her first month on thioridazine in doses to 150 mgm. t.i.d. Then hypotension as low as 80/60 was noted daily even as the dosage was being de-

creased. When medication was stopped a normal pressure of 118/75 returned.

COMMENT

It would seem that hypotension is at least one side effect that thioridazine (Mellaril) has in common with the other phenothiazines. The effect on blood pressure in these cases was unpredictable, not dependent on dosage or length of administration.

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CASE REPORTS

CASE REPORT OF AN ACUTE OVERDOSAGE OF NARDIL¹

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The monoamine oxidase inhibiting drugs are becoming increasingly widespread in their usage. They are used extensively in depressions, and recently one of them, Nardil, has been suggested to be of value in the treatment of angina pectoris, rheumatoid arthritis, and psoriasis(1). Due to their widening employment and because they are used primarily in patients with depressive features we feel that acute toxic overdoses of the compounds of this group will appear in increasing frequency.

This case report concerns a 42-year-old white female, who has been a patient here 8 times since 1953, having been diagnosed as a schizophrenic reaction on 7 of the 8 admissions with paranoid type predominating.

The general clinical picture on previous admissions has been one of depression, psychomotor retardation, and paranoid delusions with occasional auditory hallucinations. Agitation has never been prominent.

Three days prior to the present admission a local physician had prescribed Nardil: tabs 60, 15 mgm. t.i.d. On that day the patient took 3 tablets and the following day, 4 tablets. On the day prior to admission she ingested 40 tablets at approximately 5:00 P.M. No nausea and vomiting or gastric lavage was reported. No unusual behavior was noted that evening. The patient was awakened at 6:00 A.M. on the day of admission after an uneventful night, and was noted by the husband to appear "drunk." She could not stand up, and slowly during the morning her speech became thickened and incoherent.

The patient was first seen on the psychiatric ward approximately 19 hours following the reported ingestion. When seen initially, she was unable to hold her head up, could

walk only with assistance, and was disoriented in all spheres. She rapidly became delirious on the ward, screaming incoherently, and required physical restraints.

Physical examination revealed her to be in good physical condition with the following additional findings: B.P. 170/120 (on all previous admissions B.P. approx. 110/70), pulse 100, respiration 22.

Fixed, equally dilated pupils and generalized hyperactive deep tendon reflexes were noted. There were no abnormal reflexes elicited, and eye grounds were not remarkable. Also prominent were isolated muscle fasciculations over trunk, extremities, and especially the jaw. There was no vomiting.

Her hospital course was complicated by a moderate dehydration on 2nd hospital day secondary to actively struggling against restraints in an extremely warm environment. Patient was rehydrated via nasogastric tube over next 24 hours. Patient's temperature rose to 105 degrees on 2nd day and remained for 24 hours at this level. Urine output during this time was 725 cc. No clinical evidence of infection was found; however the temperature dropped precipitously 12 hours after antibiotics were begun. A possible central hyperthermic reaction to the drug cannot be ruled out as the basis for the fever.

Over the next 5 days the above signs slowly disappeared. The muscle fasciculations were gone by the 3rd day, temperature normal by 3rd day, pupils returned to normal by 4th day, as did DTR's. Manic behavior, including disorientation, paranoid delusions, auditory and visual hallucinations, disappeared by 5th hospital day. B.P. slowly decreased to normal (110/70) by 5th day (all supine recordings). An FBS, Thymol Turbidity, and Ceph. Flocc. determined on 2nd hospital day and 3 wks. later were within normal limits.

It has been reported that side effects of continued Nardil therapy include: hypo-

¹ Phenelzine dihydrogen sulfate.

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tension, altered liver function tests, micturition, occasional rash, and nausea and vomiting(2). None was seen in this case of acute toxic overdosage. Hypertensive reactions and hypomania have been ascribed to sensitivity reactions(3). Features of severe overdosage reported and not seen in this case include angina-like pain, migraine-like headache, convulsive seizures, opisthotonos, and pinpoint pupils(4).

In summary the patient represented a medical supportive problem the main features being: confined to bed, sedated with Sparine, and strict attention to water and electrolyte balance. This oral dosage of

Nardil represents approximately 12 mgm./Kgm., and apparently was cleared by the patient in 5 days with no residual damage being detected. It is felt that high acute dosage of this drug represents a life-endangering situation if adequate supportive measures are not rendered.

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4. *Ibid.* (see 1).

POST-THYROIDECTOMY PSYCHOSIS TREATED WITH IMIPRAMINE

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Psychosis associated with hypothyroidism is a well-known but complex disorder whose treatment is frequently unsatisfactory unless the symptomatology is a direct consequence of the deficiency in circulating hormone. If the latter be the case, thyroxin is curative; otherwise, treatment methods run the gamut with varying degrees of success. The following case report describes the use of imipramine² in a post-thyroidectomy psychosis which failed to respond to thyroxin alone.

Case Report: A 21-year-old WSM enlisted man came to the surgical outpatient department two months after a subtotal thyroidectomy for toxic goiter with complaints of weakness, tension, and feelings of worthlessness. When a repeat radioactive iodine uptake was found to be 8% (hypothyroid) and the conversion ratio, 15% (low euthyroid), thyroid extract in doses of one grain b.i.d. was prescribed. A few days later, however, the onset of overt somatic and self debasing delusions, blunted affect and perception, and psychomotor retardation made it

necessary to admit the patient to the psychiatric service. Significant details in his past history included a record of ineffective performance during basic training, difficulty in school, and a rigid, punitive upbringing in a small midwestern town. An EEG recorded not long after admission was characterized by diffuse slow activity of 4-5/sec. frequency, but it could not be stated with certainty that this pattern was of cortical origin; the entire record was felt to be of only borderline abnormality.

With a working diagnosis of psychotic depressive reaction secondary to thyroid deficiency, the patient was maintained on thyroxin alone plus the usual ward milieu therapy. His grossly psychotic symptoms gradually remitted to some extent over the next 6 weeks, but after he was transferred to an open ward, marked motor and intellectual retardation reappeared along with delusional ideas concerning what he fantasied to be the relationship between his operation and punishment for sexual activity (especially masturbation). A battery of psychological tests given at this time was suggestive of schizophrenia, but the results were not felt to be definitive in view of his overall depressed condition. The patient was not clinically myxedematous, although a repeat RAI was 3% and the conversion ratio, 7% (of questionable significance, however, in the presence of thyroxin therapy). Phenelzine³

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² Supplied as Tofranil through the courtesy of Geigy Pharmaceuticals.

³ Supplied as Nardil through the courtesy of Warner-Chilcott Laboratories.

in doses of 15 mgs. t.i.d. was then added to the therapeutic regimen. The patient's condition nevertheless continued to deteriorate rapidly over the next 6 days, and because of the exigencies of his clinical status an alternative energizer, imipramine, was substituted for the phenelzine in 25 and then 50 mg. q.i.d. doses. The response to the latter was dramatic. Within two days his downhill course had been arrested (rapid action for imipramine, but by no means infrequently observed), and within 2 weeks his psychotic symptoms had disappeared entirely. The patient continued to receive imipramine for 5 additional weeks beyond the time he had reached what seemed to be his premorbid status. He was maintained subsequently on thyroxin alone and 2 weeks later was released from the hospital fully recovered. A 6 month follow-up report found the patient working steadily in civilian employment following honorable discharge from the service and getting along well on a maintenance dose of thyroxin.

DISCUSSION

The failure of this disorder to respond to thyroxin alone places it among the group of post-thyroidectomy psychoses that are un-

masked or precipitated by the surgery but are not caused strictly by the hypothyroidism. The patient's psychodynamics, as suggested by the delusional content and past history, and his relatively unremarkable physical status also imply reactive rather than endogenous etiologic factors, yet psychic energizers were employed nonetheless because it would be hard to discount endogenous factors altogether in the presence of demonstrated endocrinopathy. It is regrettable that clinical necessity dictated a switch in drugs 6 days after the commencement of therapy and confused the issue unavoidably in view of the well known time lag between the onset of medication and the remission of symptoms, but the almost immediate reversal of a progressively deteriorating course by a drug whose mode of action differs substantially from that of its predecessor presents a strong argument for the efficacy of the imipramine, rather than of the phenelzine. It would nonetheless be informative to try the latter again under suitable circumstances.⁴

⁴ Bibliography on request.

"PLACEBO" (SIMULATION) ELECTROCONVULSIVE THERAPY

J. A. GUIDO, M.D., AND J. JONES, M.D.¹

The neurotic patient is seldom admitted to a state hospital facility unless, as in this case, the patient has no exact knowledge of his identity or place of residence. This report tends to emphasize the role of psychological factors which apparently were dominant in the therapeutic remission of psychogenic amnesia of events antedating admission to the hospital.

Present Illness: A 24-year-old, Caucasian, single, ectomorphic male was admitted with a history of retrograde amnesia, persistent and generalized cephalalgia, oscillopsia, and lethargy. A hyperthermia of 99° F. and EEG findings of "borderline diffuse slowing" suggested the presence of encephalitis; however, this was ruled out with a normal lumbar puncture and physical and neurological examinations. Hemo-

gram, urinalysis, and PBI were all within the normal range. The MMPI, multiple drawings tests, sentence completion tests, Bender-Gestalt tests, Wechsler memory scale, and Rorschach tests concluded "the hysterical components which are usually found with individuals with a neurotic type of dissociative reaction seem to be absent in this individual."

Hospital Course: The patient was placed on a "secure ward" with an active treatment program and ECT, which he frequently requested. However, periodic psychotherapy associated with 8 amytal-methedrine interviews were undertaken over a period of 6 weeks without improvement. He voluntarily participated in the various ancillary therapy programs and at no time displayed psychotic ideation nor affective disturbances.

Since he had indicated a desire to receive ECT, it was felt that the presence of auto-suggestion as well as the influences of mass suggestion by other patients could be utilized therapeutically (1). He was "prepared" and in-

¹ Respectively, Senior Psychiatrist and Resident Psychiatrist, Metropolitan State Hospital, Norwalk, Calif.

cluded with other patients awaiting ECT, thrice weekly. The treatments were undertaken in a room where another patient would receive ECT subsequently. An intravenous injection of 20 mgm. of Anectine was administered, a bite was inserted, and after the disappearance of the "muscular fibrillations," a very slight current (15 volts, 5 milliamps) was applied bitemporally over a period of one second; a few seconds later, the electrodes were removed and positive-pressure oxygen was administered until respirations returned. He remained apparently quiet but not unconscious. Several minutes after the second patient received a treatment, he displayed thrashing, purposeless movements and, later, complained of cephalalgia, myalgia, "confusion," and of a "wobbly" gait.

He asked when his memory would return, and was definitely assured that it would return after his sixth treatment. With each "placebo ECT" he became progressively "confused" and "amnesic" for recent events. After the sixth treatment, he jubilantly proclaimed complete restoration of his memory. Following his ninth "placebo ECT," he refused to remain in the hospital for further psychiatric care; occasional telephone calls from the patient report he is gainfully employed.

SUMMARY AND CONCLUSIONS

Nine placebo electroconvulsive treatments produced a definitive symptomatic

remission of psychogenic amnesia in a patient diagnosed as Dissociative Reaction.

The patient's closeness with the doctor, ward personnel, and ancillary therapies intensified the element of suggestibility and the "placebo effect" (2) of electroconvulsive treatment. This was apparent despite the exclusion of "hysterical components" by psychometric examinations.

At no time was the patient fearful or undesiring; as a matter of fact, he was overly willing and frequently requested electroconvulsive treatments. Unlike the use of simulation ECT in chronic schizophrenic patients, this report dismisses the utilization of fear and the loss of consciousness as important therapeutic factors (3, 4). This article also demonstrates the need for more extensive studies to encourage recognition of underlying "neurotic and hysterical factors" when describing the therapeutics of electroconvulsive treatments.

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CAMPTOCORMIA—A RARE CASE IN THE FEMALE

FREDERIC PAUL KOSBAB, M.D.¹

Camptocormia, or the hysterical bent back, has so far not been reported in women. The syndrome was mentioned first in the literature by Brodie (1) in 1837 and later by several others during and after both World Wars when young soldiers employed this hysterical phenomenon to escape from hardships of military life and combat situations (2-6). In the French literature, cases of camptocormia in non-military personnel from industrial areas have been reported (7), but none in a female.

It therefore appears warranted to report the following case of camptocormia in a female patient:

A 28-year-old housewife, mother of 4, twice divorced and living in separation from her 3rd husband, entered the hospital in a stooped body posture, her back bent sharply from the hips in an angle of about 70 degrees. She complained in an angry and belligerent tone of voice that this painful "back condition" had now been present for 6 months, and before that on and off for 10 years, the single "spells" lasting from 1 day to several months. She had had numerous medical examinations, including X-rays, but the doctors had "failed to find anything organically wrong with her back"; however, she felt completely incapacitated and unable to take care of household and children.

The patient presented her grotesque posture at all times when walking around or standing but was able to straighten her back completely

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when placing herself in the recumbent position. This latter phenomenon, together with absence of any structural lesions, appeared diagnostic for camptocormia.

The patient, whose insistent and belligerent demands for further diagnostic measures and orthopedic procedures were ignored, was consistently and in a non-punitive manner told to "straighten up a bit every morning" (an approach which was already successfully employed by Hamlin (3)); she gave up her functional symptom completely after 2 weeks of hospitalization. Subsequent psychotherapy which was partly supportive, partly uncovering, revealed the patient to fall in the group of passive-aggressive personality trait disturbances of the aggressive type, which factor was mainly responsible for her difficulties and intense struggles in life, including 3 unsuccessful, combative marriages, a very hostile and ambivalent relationship with mother and sister, and an altogether very unsatisfactory domestic situation. Under the circumstances, it appeared obvious that the hysterical symptom of camptocormia had served as effective means to escape from the emotional consequences of a more and more unbearable life situation, with relief of anxiety representing the fundamental and primary gain.

Etiologically, no significant back injury was found or claimed. A car accident, some 10 years ago, was mentioned by the patient but not connected with the back syndrome. No other claims were ever made.

The outlook for this patient appeared guarded, although no relapse had occurred in the hospital, and after a total of 9 months of observation further follow-up was felt to be desirable.

The aforementioned case of camptocormia in a female is believed to be the first on record. The question why this functional syndrome, well known in males for over a century, has not been described in women before, appears of psychiatric interest and worth some further investigation.

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ENURESIS AND THYROTOXICOSIS: A BRIEF CASE REPORT

NORMAN SHER, M.D.¹

Descriptions of the background and personality of the male enuretic (1) and thyrotoxic individual (2) have several features in common. The most notable of these are a hostile, rejecting mother figure in early life, subsequent identification with such a figure, and the persistence of passive, feminine personality traits. No reported cases were found in which these two disorders occurred together.

Case Report.—The patient is an 18-year-old white male first seen for nocturnal enuresis which started at age 15. Shortly before the

onset of the enuresis his family had moved and bought a motel because the father had crippled his left hand and lost his job. The patient had been seen and treated by a local physician, but continued with his difficulty. At age 18 he enlisted in the Army. His enuresis persisted and he was seen by the CU clinic during basic training. No organic disease was noted. At his permanent assignment he was again referred to a medical facility and thence to the psychiatric service. He was a retiring, passive individual who felt he and his mother were alike, and who seemed preoccupied with the idea of "having to help" his mother. It was thought that his enuresis was on a psychogenic basis. He was followed for several months with water restriction, probanthine and supportive psycho-

¹ Manhattan State Hosp., Ward's Island, New York 35, N. Y.

therapy. His enuresis, however, persisted. At no point was any evidence of hyperthyroidism noted. He then was convicted of theft, and placed in the stockade. Two weeks later he complained of increasing nervousness and fatigue, and was noted to have a diffusely enlarged, non-nodular thyroid, a fine tremor and a pulse rate of 120. An I 131 uptake was 72% in 24 hours, a PBI 27 mg.% and a BMR plus 41. A diagnosis of diffuse, toxic goiter was made, with the suggestion that this be treated surgically after medical preparation. He was hospitalized, and treated with propylthiouracil and later Tapazole. In two months his PBI had dropped to 9.5mg.% and his BMR to plus 5, but he was still judged to require further presurgical preparation. The patient continued with his enuresis while in the stockade and during the first week in the hospital, but after that had no difficulty.

DISCUSSION

There are a number of interesting features to this case, among which are the late onset of the enuresis and the acting out

(theft). Of major interest, however, is the relation of the enuresis to the thyrotoxicosis. Two possible explanations of this are :

1. The enuresis might be an early (and hitherto undescribed) sign of hyperthyroidism on physiologic grounds alone.

2. Both the enuresis and the thyrotoxicosis might represent different, inter-related psychophysiologic attempts in a given individual to cope with his life situation.

It seems unlikely that enuresis as a sign of early hyperthyroidism would not have been previously noted. This, along with the personality similarity in the (male) enuretic and thyrotoxic individual tend to support the latter hypothesis.

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HISTORICAL NOTES

HENRY M. HURD AND THE JOHNS HOPKINS "BIG FOUR"

JEROME M. SCHNECK, M.D.¹

Henry M. Hurd was a man of great capability and with a distinguished career. Some of his accomplishments are remembered, but others were never widely known. Reluctantly, he prepared autobiographical information that appeared under the heading, "Some Random Recollections," as the last chapter in a biographical volume by his friend and admirer, the well known gynecologist Thomas S. Cullen(1). The book(2) with its personal reminiscences of Hurd has apparently received little attention. It is a small work, less than 150 pages, including a bibliography of Hurd contributed by Minnie Wright Blogg, Librarian at The Johns Hopkins Hospital. Cullen prepared his book at the request of members of the Hospital Board of Trustees. He had joined the hospital in 1891, encountered Hurd professionally, and became one of his friends. Later he wrote "... until now I have never had the slightest conception of the tremendous amount he has accomplished and of how largely he has been responsible for the phenomenal success of The Johns Hopkins Hospital"(2).

Hurd tells us he was born in Union City, Michigan, on May 3, 1843, the son of a physician, Dr. Theodore Canfield Hurd. His mother was Eleanor Eunice Hammond. His father is described as a man of energy, foresight, business acumen, and love for his profession. He was a graduate of Yale Medical School.

Henry Hurd's early years were spent on a farm near Union City. His father died in 1845. His mother married a younger brother of her deceased husband. This brother and another were also physicians. Still other relatives were of this profession. His stepfather was recalled as a kind man, interested

in the education and development of his three stepchildren.

In 1854 the family moved to Galesburg, Illinois. There, at age 14, Hurd entered Knox College. For reasons of health and because of conflicts between rival factions for control of the college, Hurd remained at home for one year after having completed two years of study at the college. He taught at a country school. In 1861 he entered the third year at the University of Michigan in Ann Arbor and was graduated in 1863. He appreciated the change in school because contacts with teachers and students coming from distant places were more stimulating. Among the most stimulating influences was Andrew D. White who subsequently became President of Cornell University.

Hurd studied medicine under a preceptor, took a course of medical lectures at Rush Medical College in Chicago and another at the University of Michigan. He was graduated in medicine in March, 1866. Failing to gain entrance into the United States Navy on the ground of being a poor health risk, he was to say later, "I now recognize that this unkind verdict was probably one of the best pieces of good fortune I ever had"(1).

C. B. Burr, Hurd's successor at a later position in Pontiac, Michigan, tells us that Hurd's preceptor in his medical studies was his stepfather, and that after his graduation as a physician he did hospital work in New York where he studied also before moving to Chicago(3). There he was in general practice for two years.

In 1870 he was invited to serve as a medical officer in the State Hospital for the Insane at Kalamazoo, Michigan. E. H. Van Deusen was in charge. "I expected to remain during the summer only, but became so much interested in the work that I accepted a permanent appointment and remained in Kalamazoo eight years"(1). In 1878 he became assistant superintendent but left after a few weeks to take charge of the Eastern

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Michigan Hospital for the Insane at Pontiac. "This institution I opened, organized and conducted for 11 years, or until 1889"(1). Hurd became active in the Association of Medical Superintendents of American Institutions for the Insane (later the American Medico-Psychological Association and finally the American Psychiatric Association) (4). He served as Secretary (1893-1897) and President (1898-1899). He edited the *American Journal of Psychiatry* from 1897-1904. In his hospital work he opposed unnecessary restraint of patients, favored their employment, supported the cottage plan and was associated with all progressive developments. He was active in several medical organizations.

In 1889 he was appointed superintendent of The Johns Hopkins Hospital, which office he held until 1911, when he retired to become Secretary of the Board of Trustees. Burr tells us that Hurd hesitated to accept the Johns Hopkins appointment. It meant relinquishing his clinical psychiatric connections. He was strongly encouraged to accept(3). He had already started a new institution and now he had a similar opportunity. Cullen wrote, "In this institution he was destined to establish later the most harmonious relationship between the hospital and The Johns Hopkins Medical School which opened its doors in 1893. His wise council, his broad vista and his tact have in large measure been responsible for the continuous cordial and intimate relations that have always existed between the medical school and the hospital"(2). It has been stated that Hurd's abilities and his character are reflected especially well in the series of annual reports of the Hospital from 1889 to 1911. In his first report he mentioned the appointments of Osler, Welch, Kelly and Halsted. He stressed the services of Billings (a later professional collaborator(15)), and President Gilman especially.

Hurd initiated *The Johns Hopkins Hospital Bulletin* and *The Johns Hopkins Hospital Reports*. He served as editor of both and many an article had to be reworked completely by him. He has been accorded much credit for their early success. His own writing continued with emphasis on medical education, nursing education, hospital management and psychiatry. One of Hurd's

best known publications is his edited four volume *Institutional Care Of The Insane In The United States And Canada*(5). He alone wrote the first volume.

For a view of the man and his impression on others we turn to Cullen's colorful description :

Dr. Hurd did not hold himself aloof from the house staff, but after the evening meal often dropped into the reading room to have a chat with the men congregated there. Every now and then an informal invitation came to dine with Dr. Hurd, Mrs. Hurd and his daughters. These were red letter occasions—events never to be forgotten.

Every one of the men who was connected with the hospital during Dr. Hurd's time has a vivid recollection of that tall, slender figure passing silently down the corridors with his head bent slightly forward and apparently walking on air, his tread was so light. He rarely was content to mount the stairs one step at a time, he invariably went up two at a time with his arms outstretched as if he contemplated an aerial flight.

Celebrated men who are closely associated with large numbers of young men are often given a special name as a mark of the esteem and affection in which they are held. When the men of the hospital staff of 20 years ago gather together and discuss old times they always refer to "Uncle Hank" with the warmest regard.

The visitor to the hospital—the one who comes to stay a few weeks or months—while impressed by the good work done in the various departments and by the original articles published by the hospital is more impressed by the spirit of cooperation and good fellowship that exists in the hospital and medical school. Dr. Hurd and the "Big Four"—Drs. Osler, Halsted, Kelly and Welch—have in large measure been responsible for this delightful atmosphere.

Many of the senior members of the hospital staff have been geniuses and it is a well-known fact that geniuses frequently become so engrossed in their individual subject that they are temporarily totally oblivious to the fact that other people have to be considered and that these people have precisely the same rights and privileges as they. A tactful, gentle, but firm tug emanating from the superintendent's office would awaken such an individual from his reverie. It was this absolute fairness on the part of Dr. Hurd that won for him the confidence and affection of the senior staff. They

knew that they would always get a square deal(2).

Hurd had been carrying the entire responsibility for editing the hospital publications. On Jan. 9, 1899 Osler wrote to him suggesting that "there should be an Editorial Committee composed of you and Mall, and Abel, and Howell and a couple of the younger men, with Smith as Secretary to do the proof-reading and to relieve you of all the worry of it"(6).

Dr. Hurd's increasingly burdensome activities, however, probably did not account for the impression of a "crotchety exterior" that some persons observed. They never detracted from his helpfulness. Heuer recalled, "He did many kind deeds for young men about the hospital, few of which even became known. A rather forbidding man because of his caustic tongue, he had a keen sense of humor"(7). Hugh Young told of Hurd receiving letters from prominent physicians for aid in retrieving manuscripts that Welch permitted to accumulate without reply(8). In addition to other tasks, Hurd would hunt through Welch's collections, during his absence, to find and return the missing items. Amongst these observations are others which pictured him as often cautious and non-committal in letters and transactions(9).

It was probably no accident that Cushing, telling of the youth of Osler, Welch, Halsted and Kelly at the time of their Hopkins appointments included Hurd too(6). And Welch's biographer, describing the "Big Four," added,

President Gilman himself undertook to find the last of the men absolutely necessary for the functioning of a hospital, the superintendent, and chose the head of an insane asylum in Pontiac, Michigan, Henry Hurd . . . Hurd at Johns Hopkins proved to be the ablest hospital superintendent of his time in America (10).

Hurd was linked directly with the Big Four also by Lewellys Barker(11). Yet there were other men of great merit in the early years of the hospital and medical school. Mall is one example(12). Hurd alone seems consistently to be accorded this fifth position. It is of interest too that Hurd shared

the historical perspectives of his colleagues and was especially concerned with early data about The Johns Hopkins Hospital (13).

To raise the question whether the "Big Four" reference should be more suitably the "Big Five" may appear to be stretching a point. The fact is that Kelly, according to his recent biographer, "always insisted that Hurd was as much one of the founders of the School of Medicine as were the original four department heads"(14). This precise statement is amply supported by an assertion of Cullen :

I have always felt that Hurd should have been included in Sargent's portrait group of the "Big Four." It should have been five. In his life Dr. Hurd did as much for Johns Hopkins as any of the four and it might easily be shown that he did as much for them as he did for Hopkins.

Welch and Osler and Halsted and Kelly would never have had the reputations they made, except for Hurd. He founded the Hopkins Hospital Bulletin before there was a medical school and he started the Hopkins Reports and edited both for years. The four others recognized in theory that they should record what they were doing and finding out ; but it was Hurd who made them do it. He kept after them all the time to write up their experimental work and their interesting cases, their clinical observations and laboratory findings, for the Bulletin first and then for the Reports ; never let them rest until they had done it.

And that more than anything else, as they all recognized was what made Hopkins' name, and theirs. Especially in Europe. Hopkins Bulletins were known in the European clinics before the hospital had been going three years. So, thanks to Hurd, were the names of the "Big Four." Like most men who do things, they got their satisfaction in doing them. It was Hurd who made them write and made them famous (16).

Some aspects of Hurd's work and personality have been mentioned briefly, and the idea of a "Big Five" has been suggested by documentation and implication. But there is more to the essence and importance of his contributions. His activities, writings, personal associations and the full impact of his efforts must await another report.

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THE FIRST ELECTROCONVULSIVE TREATMENT GIVEN IN THE UNITED STATES

SYDNEY E. PULVER, M.D.¹

The readmission of the first person treated with electroconvulsive therapy at the Institute of the Pennsylvania Hospital provided the stimulus for this brief note on the introduction of electroconvulsive therapy to the United States.

As far as I can determine, the first treatment in the United States was given by Dr. Victor A. Gonda. It is best described in the words of his son :

In midsummer of 1939, dad was in communication with Cerletti and in November of that year he received delivery of an Italian machine (including a separate ohm-meter) made by G. Zurli and Dr. A. DeRegibus in Genoa, Italy. For the first two months dad did not begin treatments, while in his cautious and methodical manner he tested out the apparatus on experimental animals (producing convulsions). I recall vividly also, just before Christmas of 1939, his placing the electrodes on his own thigh, experiencing a violent contraction of his muscles and injuring his leg which hit the table. Subsequently, he was concerned about the possible pain patients might experience were they not immediately rendered unconscious. This delayed his giving of the first

treatment until late January of 1940 at the Parkway Sanitarium in Chicago. I recall the anxieties and the tensions experienced with the giving of the first few treatments, having accompanied my father to the Sanitarium on those occasions. By May of 1940, dad had treated several patients and had learned many nuances relative to the treatment.

The first treatment mentioned above was given some time before January 20, 1940. Shortly thereafter, on February 6, 1940, Doctors David J. Impastato and Renato J. Almansi treated their first patient at Columbus Hospital, New York City, using a machine brought by Almansi from Italy.

Meanwhile, interest was aroused, and American machines were being constructed. Using a machine constructed by Mr. Franklin Offner of Chicago, Dr. Douglas Goldman treated his first patient on April 23, 1940 at Longview State Hospital, Ohio. An earlier American machine, designed by Dr. Joseph Hughes, was constructed by Mr. Fritz Schindler at the Institute of the Pennsylvania Hospital. Construction was finished late in 1939, and a series of cats and monkeys were treated and later studied for cerebral damage. The first human treatment with this machine was administered by Dr.

¹ Institute of the Pennsylvania Hospital, Philadelphia, Pa.

Hughes and Dr. Lauren H. Smith on May 1, 1940. The subsequent history of this patient is interesting. At the time of her first treatment she was 50 years old and had been hospitalized for 4 years with "intractable" involuntional depression. Twelve Metrazol convulsions had previously been ineffective. Treatment on May 1 was subconvulsive; and it was not until the fifth treatment on May 17 that a convulsion was

produced. After 23 treatments in the next several months, she showed no signs of depression, and was discharged in 1941. She remained well for 18 years! In 1957 she was hospitalized with a second depression, which required 9 treatments to effect a remission. Although the original machine still resides at the Institute, sentiment did not prevail and she was treated with a more modern apparatus.

COMMENTS

A NATIONAL INSTITUTE OF SOCIAL AND BEHAVIORAL PATHOLOGY

Our discussion of research areas in the common frontiers of psychiatry and law(1, 2) far from exhaustive though it is, has nevertheless indicated how vast the field of psychiatry and the law is now perceived to be. The map of common problems of social and behavioral pathology has unfolded gradually through the years. In our view the moment is opportune to provide a national center of investigation designed to provide a continuing stream of initiative, an integrating focus, and a place of work entirely devoted to the study of social and behavioral pathology.

Such an institute should be geographically inclusive in the sense that it should take intellectual responsibility for examining the problems in the national context. It will naturally assume some special responsibility for the locality where it may be situated. Preoccupation with national trends and potential developments would not blind the Institute's investigators to the world context, and to the importance of comparative research studies which seek the significant phenomena regardless of political boundaries. A National Institute of Social and Behavioral Pathology would be a natural participant in the work of similar establishments at every level—personal, local, national, international.

A broad responsibility of the Institute would be to aid in the clarification of national achievement objectives in the fields of law and mental health. It would undoubtedly operate within the fundamental assumptions of human dignity which are incorporated in the aspirations of American society and partially articulated in such instruments as the Universal Declaration of Human Rights. Goal clarification calls for the presentation of long-range, middle-range, and more immediate objectives.

The clarification of goal called for above must be conducted in the light of dependable information about the remote and recent past, and the projection of the

future. Since existing machinery for the obtaining of essential statistics is wholly inadequate, one prime task of the Institute would be to set up procedures for the collection, evaluation and publication of needed information concerning the incidence and prevalence of various forms of crime and alleged crime, their disposition by the social, police, prosecutory, judging and incarcerating agencies, including probation and parole. Hopefully these initiatives would lead to the development and dissemination of more psychologically illuminating data.

The core of the Institute's work, as indicated throughout our papers, is the discovery and verification of social and behavioral hypotheses that explain the individual and social dislocations that concern us. Thinking nationally, it is evident that the varied circumstances among the several States permit us to design experiments in nature—using States as "control" for each other, comparing by field studies factors—demographic, economic, ethnic, for instance—that predispose to high rates of crime in some areas and to greater conformity in others. Investigative methods would be in no wise restricted to this pattern, of course. As our review of promising lines of attack has suggested, there is room for much versatility which it will be one of the principal aims of the Institute to encourage. It is of fundamental importance to provide a hospitable environment for the pursuit of every promising lead, and to guard against the domination of inquiry by advocates of any one set of factors, whether economic, political or professional.

Besides the broad definition of the over-riding objectives of American society the problem will be to study a limited array of socio-legal possibilities in terms that bring out the social costs as well as the probable gains of following a particular sequence of change. In terms of culture, social class,

interest group, and personality form these costs (and gains) need to be brought into the clear light of rational assessment.

In a word we are affirming that the many common frontiers of psychiatry and law involving social and behavioral pathology now justify a national effort at joint exploration, settlement, and incorporation into the

fraternity of organized intellectual states.
Lawrence Zelic Freedman, M.D.
Harold D. Lasswell, Ph.D.

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CORRESPONDENCE

SENSORY DEPRIVATION

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY :

SIR : Referring to the letter of Jack Arbit, PH.D., in the November 1960 issue which gives important information about early research on the subject of sensory deprivation, quoting other research in the same area recently published in the APA Journal, may I point out that some of the work which was done during the war in Switzerland has not been quoted by any author in your journal.

Your readers may be interested to know the results of the research which I published in *Schweizerische Zeitschrift für Psychologie*, 1948 Band VII. Heft 1, Verlag

Hans Huber, Bern, entitled *Die Psychologie der isolierten Gruppe*. The observations were made in Swiss labor camps during World War II for refugees and aliens who lost their passports because their countries of origin were invaded, and also in remote Swiss mountain areas and state hospitals.

It is to my knowledge the only psychological treatise commended by Dr. Albert Einstein, who in a letter to me made an interesting comparison between the psychological phenomena I observed and certain electrical physical phenomena.

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Lexington, Ky.

TREATMENT IN TRANSVESTISM

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY :

SIR : In the September, 1960 issue of your *Journal*, Dr. Veronica M. Pennington in the paper "Treatment in Transvestism" describes a successful outcome in the treatment of a 31-year-old transvestite. It is concluded : "Transvestism is perverted behavior which has been corrected chemically by the phrenotropic agents nialamide, chlorpromazine, and meprobamate. . . ."

This case report calls to mind a 40-year-old divorced man who consulted me as an outpatient in July 1956 with a chief com-

plaint of transvestism since age 12. He was seen in 4 sessions of psychotherapy. During the last session he announced his intention to marry again the following September.

He consulted me again in July 1960 because of trouble in being assertive in his marriage, both with his wife and teen-age stepson. Transvestism was not a symptom nor had it been in the intervening years.

The effective agents in psychiatric interventions are difficult to specify.

Robert D. Gillman, M. D.,
Washington, D. C.

ORDINAL POSITION

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY :

SIR : Dr. Hanus J. Grosz' comment on the supposed lack of significance of ordinal position in the family (*Am. J. Psychiat.*, 117 : 165, 1960) omits consideration of one of the most important papers on the subject, McArthur's "Personalities of First and Sec-

ond Children (*Psychiatry*, 19 : 47, 1956). This paper seems to have appeared too late to be included in the 1956 reviews by Koch which Dr. Grosz quoted.

The McArthur paper, based on a three generation study of normals, suggests that "the first child in a family is more commonly adult-oriented, while the second child is

more likely to be peer-oriented." It also indicates that "of the various traits that arise from first-born and second-born orientations, sensitive seriousness in the first and easy-going friendliness in the second seem best documented."

The McArthur study appears to be both thorough and accurate, and apparently in accord with much clinical experience. The reason for McArthur's findings might be found by viewing the family as a hierarchical structure (N. S. Lehrman: "The

Family: a Biosocial Hierarchy; How Democracy Begins at Home," paper read before the A.A.A.S., Dec. 1959). In this hierarchy, particular importance for any one individual can be seen as resting on the person next above him. The mother will usually be next above the adult-oriented oldest child, while an older sibling will tend to be next above the peer-oriented younger sibling.

Nathaniel S. Lehrman, M.D.,
Great Neck, N. Y.

REPLY TO FOREGOING

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY:

SIR: A review of the literature on the significance of ordinal position in the family does not support the claim that this factor can be singled out as a determinant of specific personality traits. In individual instances in which ordinal position appears to be of importance its meaning differs greatly from one person to another and from one intrafamilial setting to another.

In regard to the McArthur study, quite apart from its own merits, one cannot help but question the pertinence of his conclusions to the significance of ordinal position in general. The participants in his study were drawn from a group of volunteers at Harvard University and as McArthur himself remarks, "It is possible, of course, that the phenomena reported are peculiar to the

Harvard Scene." This impression is further reinforced by McArthur's observation that even within this highly selected population sample "among the private-school boys . . . 44% of the first-born were classified in complete agreement with first child theory, while only 25% of the public-school first borns were so typical."

There are other equally obvious biases which have gone into the McArthur study which cannot be discussed in this brief answer to Doctor Lehrman's letter. At any rate, it hardly seems warranted to alter one's conclusions which are drawn from the literature as a whole, on the basis of this study.

Hanus J. Grosz, M.D.,
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Yeshiva University.

IN MEMORIAM

ROBERT BUSH MCGRAW

1896-1960

Robert Bush McGraw, Professor of Clinical Psychiatry of the College of Physicians and Surgeons of Columbia University, died at the Harkness Pavilion of the Presbyterian Hospital in New York City on October 2, 1960, at the age of 64.

He was born in Cortland, N. Y., on November 16, 1896. He came from a family of whom many were good doctors, including his maternal grandfather who served his community for a half century. Dr. McGraw's early education was in McGraw, a small village near Cortland. When he was 14 his family moved to England and there he attended the Boys' Grammar School at Hitchin, Hertfordshire, later completing his secondary education at the Finsbury Technical College in London, England. In 1914 at the age of 18, he entered Cornell University for his undergraduate years and continued in the same school for his medical training, receiving his Bachelor's degree in 1918 and his M.D. in 1921. During his school years he had many interesting positions in hospitals and spent one summer in the office of his uncle who was a medical practitioner.

After graduating from medical school and before entering upon his internship on the Second Medical Service at Bellevue Hospital, he spent a 6 months' period as medical intern at the New York Hospital, Westchester Division, at that time Bloomingdale Hospital, and was assistant physician there from January 16, 1924 to June 3, 1925.

Dr. McGraw became Instructor in Psychiatry at the College of Physicians and Surgeons, and Clinical Assistant at Vanderbilt Clinic in 1924, and between 1925 and 1927 was closely associated with Thomas W. Salmon, the Professor of Psychiatry at Columbia. About the same time he joined George Draper's Constitutional Clinic and collaborated with him in the formulation of one of Dr. Draper's 4 panels, the psychiatric

panel, and in the investigation of peptic ulcer and other psychosomatic problems. Dr. McGraw's rise in the Department of Psychiatry was rapid. He assisted Dr. Salmon in plans for The Medical Center then moving to Washington Heights and was made Chief of the new Outpatient Department and Clinical Professor of Psychiatry in 1928.

One of Dr. McGraw's chief duties as head of the Psychiatric Outpatient Department was the organization of the teaching of the third year clinical clerks. He also established a Children's Psychiatry Department as part of the service. Dr. McGraw gave a great deal of time and enthusiasm to his teaching and was one of the first to advocate visits by clinical clerks in psychiatry to the homes of their patients, a practice later incorporated into comprehensive care at other medical centers. He organized the first psychiatric consultation service for the Presbyterian Hospital and at his death was Attending Psychiatrist there. In World War I as a student at Cornell, Dr. McGraw was a member of the Student Army Training Corps.

During World War II he was a Senior Consultant for the Veterans' Administration and did much to arrange for the screening and treatment of veterans needing psychotherapy. He also helped to organize a psychiatric clinic for the Home Service Department of the American Red Cross.

In 1944 and 1945 Dr. McGraw administered a training program for Army doctors at the Vanderbilt Clinic. This consisted of three twelve-week periods of training and clinical instruction in the Fundamentals of Neuropsychiatry for a total of 150 officers.

In addition to teaching and lecturing at Columbia he came to grips with many practical problems of his day. Before the formation of the American Board of Psychiatry and Neurology he published a paper in the *Journal of Nervous and Mental Disease*,

February 1931, "Are Neurology and Psychiatry Separate Medical Entities?" He said, "I think we must recognize the fact that the public is choosing psychiatrists under that label more and more; and, further, that they are beginning to understand that a psychiatrist means a physician, medically trained, and not simply psychologically and pedagogically trained. A neurologist should be extremely well trained in neuroanatomy and perhaps the notion should be expressed that a man might be both neurologist and psychiatrist but could be either." He was interested in problems of hypochondriasis, insomnia, and recoverable mental disturbance of the aged. He also addressed himself to the serious problems of medical and psychiatric indications for abortion and alerted all of us to the importance of knowing the law of the land and time. He made very worthwhile contributions to the *American Handbook of Psychiatry*. In his teaching and practice he was interested in all forms of treatment which brought the psychiatrist's skills to the greatest number of patients.

Dr. McGraw was chairman or president of most of the important New York psychiatric societies. His philosophical, historical and literary contributions at the Vidonian Club, which he loved, will be long remembered. To all associated with him in

school, hospital and the community he was the ideal of a good doctor, friend and humanitarian.

As a member of the Madison Avenue Presbyterian Church, he took interest in adding to the membership's information regarding medical and psychiatric subjects and assisted in setting up standards for selection of missionary personnel for the Presbyterian Church. In recognition of this service he received a citation on the 29th Anniversary of the Missionary Society's Medical Department. He was active in the State Mental Hygiene Commission of the State Charities Aid Association, a member of the Council on Widows and Orphans and a member of a committee to study the care and education of epileptic children in public schools and homes under the Board of Education of the City of New York. Dr. McGraw was also a member of the Advisory Qualifying Committee of the Workmen's Compensation Board of the New York Academy of Medicine and member of its Committee on Medical Information.

Dr. McGraw married Catherine Ruth Ross on January 2, 1924. Besides his wife, he is survived by a daughter, Anne Barbara McGraw, and a son, Robert Bush McGraw, and 3 grandchildren.

James H. Wall, M.D.

NEWS AND NOTES

DR. DAVID RAPAPORT.—At the early age of 49 occurred the death, December 14, 1960, of Dr. Rapaport, psychologist of the Austin Riggs Foundation at Stockbridge, Mass.

Dr. Rapaport was born in Hungary and received the degree of Ph.D. in psychology from the University of Budapest.

Coming to the United States in 1938, he joined the staff of the Osawatomie (Kansas) State Hospital, going later to the Menninger Clinic at Topeka as chief psychologist, where he became the director of research.

Since 1948 he had been a member of the Austin Riggs Foundation as research associate in charge of psychology and director of psychological testing methods, as described in his *Manual of Diagnostic Psychological Testing*.

Rapaport's most ambitious publication is his *Organization and Pathology of Thought*, published in 1951 by the Columbia University Press. This huge volume represents an enormous amount of work, including the selection and translation of 27 major contributions in the German and French literature, many not readily accessible to English readers, and supplying as well extensive running commentaries throughout. In an ample concluding chapter Rapaport seeks to integrate the texts of the various authors and adds relevant more recent data. The keynote he followed in this work was the statement in the first line of his Preface: "The knowledge that thinking has conquered for humanity is vast, yet our knowledge of thinking is scant."

AMERICAN PSYCHOSOMATIC SOCIETY.—The Society's 18th annual meeting will be held at Chalfonte-Haddon Hall, Atlantic City, April 28 to 30, 1961. The meeting will begin Friday evening, April 28, at 8:30 o'clock.

Registration is Friday afternoon from 3:00 to 5:00 and from 7:00 p.m. The registration fee for non-members of the Society is \$5.00. Students, interns, residents, and fellows, \$1.00 and presentation of proper identification.

THE AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY.—The Board will hold 3 examinations in 1961: March 20 and 21—New Orleans, La.; October 9 and 10—Chicago, Ill.; and December 11 and 12—New York, N. Y.

Effective January 1, 1962, the following fee schedule will be adopted: application fee, \$75.00; examination fee, \$100.00; re-examination fee (complete re-examination), \$100.00; re-examination fee (1 or 2 subjects), \$75.00.

DR. WALTER WOODWARD.—One of the leading exponents and practitioners of occupational psychiatry in the United States, Dr. Walter D. Woodward, consulting psychiatrist to the American Cyanamid Company, died Oct. 8, 1960, at the age of 44.

A graduate in Arts from the University of Michigan, Dr. Woodward received his M.D. degree from the University of Virginia in 1943. He took graduate work in psychiatry at the U.S.P.H.S. Hospital on Staten Island and at New York Hospital. He became a member of the medical staff of the American Cyanamid Co. in 1947 and continued in that position until his death.

As exemplar, planner and teacher of psychiatry in industry, particularly in its preventive aspects, Dr. Woodward had created for himself an enviable career. The value of his leadership was widely recognized.

SECOND INTERNATIONAL CONFERENCE OF HUMAN GENETICS.—This Conference will be held in Rome, Italy, September 7-12, 1961.

The 7th International Congress of Neurology will be held in Rome at the same time and a joint session between the two bodies will be arranged.

The Genetics Conference will be held in the Conference Building of the Food and Agriculture Organization of the United Nations. Professor Luigi Gedda is chairman of the organizing committee.

Registration fees: full membership, including proceedings, \$30.00; without proceedings, \$15.00; associate membership, \$10.00.

Following the Conference an official tour

will be arranged to Naples, Sorrento, Amalfi, Salerno and Paestum.

THE YALE CENTER OF ALCOHOL STUDIES AND LABORATORY OF APPLIED BIODYNAMICS.

—The Center regretfully announces the decision of the University that, valuable as the work of the department has been for the past 40 years and promises to be in the future, its continuation as a part of Yale University is inappropriate.

The major reasons for this decision are: the diversity of academic disciplines represented in the Center's research program, and the applied rather than purely academic nature of some of its responsibilities and activities, make it difficult to locate the organization in any of the traditional departments at Yale under its current educational policy; furthermore, the University cannot increase its contribution to the necessarily expanding financial needs of this program.

The Yale Corporation has pledged continued support to the Center for a reasonable period to allow, first, completion of current research programs and, second, development of steps to facilitate in a setting other than Yale the orderly continuation of its documentation, publication, educational and other activities.

The projected 19th annual session of the Summer School of Alcohol Studies, and the Alumni Institute already announced to its 3,300 graduates, both scheduled for July 1961, are to be held at Yale University as planned.

ARBEITEN AUS DER DEUTSCHEN FORSCHUNGSANSTALT FÜR PSYCHIATRIE IN MÜNCHEN.

—22nd ed. Max-Planck-Institut. (Berlin, Göttingen, Heidelberg: Springer-Verlag, 1960. No price quoted.)

This weighty volume is an assemblage of 53 papers by 28 authors emanating from the Max-Planck-Institut and representing recent work at this Center.

The whole range of neurological, psychological and psychiatric subjects is represented in this volume, in which the actual offprints have simply been bound together.

NURSES ATTEND APA INSTITUTE.—Psychiatric and mental health nursing consultants

met in Sale Lake City on October 16, 1960, the day before the Mental Hospitals Institute of the American Psychiatric Association, to discuss programs in their states and regions. Margaret L. Cavey, psychiatric nursing consultant, chaired the meeting. Among the topics discussed were: the changing role of nursing personnel in the open hospital; psychiatric units in general hospitals; care of the aged in nursing homes and the role of the LPN in psychiatric hospitals.

5TH CONGRESS OF LEGAL MEDICINE AND OF SOCIAL MEDICINE.—This Congress will be held in Vienna, May 22-27, 1961. Professor Dr. Leopold Breiteneker, Director of the Institute of Legal Medicine, University of Vienna, is President. All aspects of forensic medicine will be represented.

Further information is available from the Secretariat of the 5th Congress of the International Academy of Legal Medicine and of Social Medicine, Vienna IX, Sensengasse 2, Austria.

THE MENNINGER FOUNDATION.—Dr. S. I. Hayakawa, internationally noted semanticist, has been appointed an Alfred P. Sloan Visiting Professor in the Menninger School of Psychiatry at Topeka, Kansas. He will serve for about three months from mid-January 1961.

Dr. Hayakawa is professor of language arts at San Francisco (Calif.) State College and is editor of *ETC.*, a quarterly review of general semantics published by the International Society for General Semantics. He has held visiting professorships at Columbia University Teachers College, the University of Notre Dame, and the University of Hawaii.

In 1959 he was awarded the Claude Bernard Medal for Experimental Medicine and Surgery by the University of Montreal, the only non-physician to have been so honored.

AMERICAN ORTHOPSYCHIATRIC ASSOCIATION.—The 38th annual meeting of the American Orthopsychiatric Association will be held at the Hotel Statler-Hilton, New York City, March 22-25, 1961. William S. Langford, M.D., professor of psychiatry at

Columbia University will deliver the presidential address on adaptation of the child in the pediatric hospital to illness and hospitalization. René Dubos, Ph.D., professor at the Rockefeller Institute, will also speak on problems of biological adaptations of children to modern society.

Further information is available from Marion F. Langer, Ph.D., American Orthopsychiatric Association, 1790 Broadway, New York 19, N. Y.

ANIMAL STUDY IN PUBLIC SCHOOLS.—The National Society for Medical Research reports: Five states—Illinois, Maine, Massachusetts, Oklahoma and Washington have laws to prohibit all or nearly all study of animals in public schools, while Pennsylvania has a wise law prohibiting only *cruel* experiments.

The perennially busy Antivivisectionists seek to extend the ban to all animal studies and have contacted local school authorities to that end, in many cases even securing pledges that no more studies involving live animals will be allowed.

As the Society for Medical Research points out, no science is well taught unless the real subject matter is studied directly, and that the study of animals is basic to education in biology and should be limited only by reasonable humane restrictions.

AWARD TO DR. NOLAN LEWIS.—The first Emil Guthell, M.D. Memorial Medal for Outstanding Contributions to Psychotherapy was awarded to Nolan D. C. Lewis, M.D. by the Association for the Advancement of Psychotherapy on Oct. 30, 1960.

At the Memorial Conference Dr. Lewis gave a conservative and comprehensive discussion of the future of psychotherapy, in which he urged the adoption of higher professional standards and more scientific methods in the application of this method of treatment, and the avoidance of sectarianism—he stressed the common denominator that must underlie all forms of psychotherapy, and the importance of suggestion inherent in the doctor-patient relationship.

PSYCHIATRISTS AND MILITARY SERVICE.—It is now possible for physically profes-

sionally trained qualified psychiatrists to meet their military obligations while assigned to the staff of Saint Elizabeths Hospital.

For further information and application forms write Dr. Winfred Overholser, Saint Elizabeths Hospital, Washington 20, D. C.

SOVIET CONTRACT WITH N. Y. SCIENTIFIC PUBLISHER.—Consultants Bureau, publishing house in New York, has, from 1946, pioneered cover-to-cover translation of Soviet scientific journals. By 1955, five Soviet scientific journals were being published by the company. The following year, the company entered into contracts with the American Institute of Physics and the American Institute of Biological Sciences to provide translation of 5 additional Russian scientific journals.

In June 1960, a contract covering the complete translation into English of 23 major Soviet scientific and technical journals was renewed with Mezhdunarodnaya Kniga, the official Soviet international book agency.

In Moscow a new contract establishing terms for exclusive English language rights to Soviet scientific books for the next 6 years was signed by Consultants Bureau and Mezhdunarodnaya Kniga, October 1960. All books published by Consultants Bureau will in future be made available to English-speaking scientists within 6 months of their publication in the U.S.S.R. Where the importance of Soviet conferences warrants speedier dissemination of their proceedings, English translations will be published at the same time as the Russian originals appear. Every book chosen for translation into English will have the recommendation of both Soviet and American scientists as being an outstanding contribution to the existing literature on the subject.

DR. KETY HEADS PSYCHIATRY AT JOHNS HOPKINS.—Dr. Milton S. Eisenhower, president of Johns Hopkins University, and Dr. Russell A. Nelson, director of the Johns Hopkins Hospital, have jointly announced the appointment of Dr. Seymour S. Kety as professor and head of the department of psychiatry at the Johns Hopkins University School of Medicine and psychiatrist-in-chief

of the Johns Hopkins Hospital. Dr. Kety succeeds Dr. John C. Whitehorn who retired June 30, 1960.

A graduate in medicine from the University of Pennsylvania, Dr. Kety joined the department of pharmacology at that University in 1943 and in 1948 became professor of clinical physiology in the graduate school of medicine. Since 1951 he has been associated with the National Institutes of Mental Health and Neurological Diseases and Blindness at Bethesda, Md. Since 1956 he has been chief of the laboratory of clinical science of the National Institute of Mental Health.

The Johns Hopkins University is fortunate in securing the services of this distinguished research scientist.

MENTAL HOSPITAL INSTITUTE FOR COMMUNITY PHYSICIANS, MARYLAND.—Family physicians across the State are invited to attend Maryland's first Mental Hospital Institute for Community Physicians to be held Mar. 1 to Apr. 5, at Spring Grove State Hospital in Catonsville.

The Institute will be held on 5 successive Wednesdays from 2 to 5 p.m. under the joint auspices of Spring Grove, the Maryland Academy of General Practice, the Psychiatric Institute of the University Hospital of Maryland, and the Baltimore Psychoanalytic Institute. Dr. Bruno Radaukas, Superintendent of the Hospital is Chairman of the Planning Committee.

Further information may be obtained from Dr. Radaukas at the Spring Grove State Hospital, Catonsville, Md. Registration will be limited to the first 50 applicants.

DR. ANTHONY JOINS CHICAGO INSTITUTE FOR PSYCHOANALYSIS.—E. James Anthony, M.D., of St. Louis, Mo., graduate of King's College, London, and a former Nuffield Fellow in Child Development at the University of Geneva, where he worked with Dr. Piaget, has been appointed to the faculty of the Chicago Institute for Psychoanalysis.

Dr. Anthony came to the United States in 1958 as Ittleson Professor of Child Psychiatry at the Washington University in St. Louis, and has been serving as head of

Child Psychiatry at the Jewish Hospital in that city.

ANNUAL INSTITUTE IN PSYCHIATRY AND NEUROLOGY, LITTLE ROCK, ARK.—The Thirteenth Annual Institute in Psychiatry and Neurology will be held on March 2 and 3, 1961, at the North Little Rock Division of the Consolidated Veterans Administration Hospital, Little Rock, Ark. There will be three related conferences on March 1 on Clinical Psychology, Psychiatric Social Work, and Psychiatric Nursing.

There is a dinner meeting planned for Thursday evening, March 2, with Dr. Robert H. Felix, President of the American Psychiatric Association, as guest speaker.

Further information may be obtained from Dr. H. W. Sterling, Manager, Veterans Administration Consolidated Hospital, Little Rock, Ark.

THIRTY-EIGHTH ANNUAL MEETING OF THE AMERICAN ORTHOPSYCHIATRIC ASSOCIATION.—This meeting will be held from March 23 to 25, 1961, at the Statler Hilton Hotel in New York City.

By arrangement with the Professional Placement Center of the New York State Employment Service, placement services will be provided during the annual meeting. The Placement Area will be on the Exposition Floor of the Statler Hilton Hotel.

Advance registration is required by everyone including members of the American Orthopsychiatric Association. Registration fee for non-members is \$9 for 3 days; \$4 for a single day. Pre-registration in workshop(s) and/or panel(s) is also required. For registration and further information write: Executive Secretary, American Orthopsychiatric Association, 1790 Broadway, New York 19, N. Y.

TRAINING PROGRAM AT THE SILVER HILL FOUNDATION.—This is a 3-year training program carried on in cooperation with the Columbia-Presbyterian Medical Center in New York. The first year of training is spent at that Medical Center and the second and third years at the Silver Hill Foundation in New Canaan, Conn. At present only 2 or 3 residents are accepted annually for training.

All stipends are without maintenance; the stipend for first year residents is \$4,000 per year, for second year residents \$7,000 and for third year residents \$8,000.

For further information write: Dr. William B. Terhune, Medical Director, Silver Hill Foundation, Valley Road, New Canaan, Conn.

TWO WORKSHOP SEMINARS IN THE RORSACH TEST.—The Department of Psychology at the University of Chicago is offering 2 workshop seminars in the Rorsach Test.

The first, June 19-23, 1961, will be about the foundations of the test. The second, June 26-30, will discuss advanced clinical interpretation. Dr. J. S. Beck will conduct both seminars.

For information write to: Rorsach Workshops, Department of Psychology, University of Chicago, Chicago 37, Ill.

PSYCHOTHERAPY WEEK AT LINDAU (BODENSEE).—Under the direction of Dr. Helmut Stolze, this training period is from May 1-6, 1961, followed by a second week, May 8-13, for practical experience. This training program is sponsored by the Medical Society for Psychotherapy in Lindau.

Further information may be obtained from The Secretariat of the Lindau Psychotherapy Week, Dienerstrasse 17, München 2, Germany.

JAMES N. BURROWS APPOINTED DIRECTOR OF INSTITUTE FOR CRIPPLED AND DISABLED.—Mr. Burrows, who received an M.A. degree from Miami University, Oxford, Ohio and a B.Sc. degree from the University of Cincinnati, has been appointed Director of the Institute for the Crippled and Disabled, 23rd St. at 1st Ave., New York City. For the past 20 years Mr. Burrows has been engaged in the management and administration of government and private rehabilitation and medical programs.

PSYCHIATRIC EDUCATION FOR GENERAL MEDICAL PRACTITIONERS.—To meet a growing demand from physicians in the field of general medicine for instruction in dealing with psychiatric problems encountered in

their regular work, a plan to meet the situation in New York State is being developed jointly by the Department of Mental Hygiene, and the New York State branches of the American Psychiatric Association with the cooperation of the New York State Medical Society.

It is presumed that the proposed courses will be so organized as to receive approval for Category 1 credit by the American Academy of General Practice.

THE AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY, INC.—The following were certified in Child Psychiatry in December, 1960:

Ackerly, S. Spafford, M.D., Louisville, Ky.
Chamberlain, Herbert E., A.B., M.D., Sacramento, Cal.
Dawes, Lydia Gibson, B.S., M.D., Cambridge, Mass.
Drewry, Henry Harris, B.S., M.D., D.Med.Sc., Woodside, Queens, N. Y.
Farrell, Malcolm Joseph, B.S., M.D., Waverley, Mass.
Fries, Margaret E., M.D., New York, N. Y.
Kessler, Edwin S., M.D., Washington, D. C.
Kesrenberg, Judith S., M.D., New York, N. Y.
Koff, Robert, M.D., Chicago, Ill.
Little, Harry Morrow, M.D., Houston, Tex.
Martin, Katharine Hawley, M.D., M.P.H., Watertown, Conn.
Rich, Gilbert Joseph, Ph.D., M.D., Roanoke, Va.
Schroeder, Paul L., B.S., M.D., Atlanta, Ga.
Simson, Clyde B., M.D., Detroit, Mich.
Solomon, Joseph C., A.B., M.D., San Francisco, Cal.
Sperling, Melitta, M.D., New York, N. Y.
Staples, Herman D., M.D., Media, Pa.
Waterman, John Howard, B.Sc., A.B., M.D., Portland, Ore.

STATEMENT TO THE AMERICAN BOARD OF PEDIATRICS AND THE AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY.—The increasing interest of potential candidates in the field of Pediatric Neurology challenges the 2 American Boards most concerned to determine guide-lines for program directors in Pediatrics and Neurology and for potential candidates in these disciplines. The Committees on Child Neurology of the American Board of Pediatrics and the American Board of Psychiatry and Neurology met on September 21, 1959, and October 21, 1960, and submit to their respective Boards the following statement: Recommendations for a desirable training program in Pediatric Neurology:

1. A year of approved internship.
2. Approved residency training in a pediatric service, sufficient to meet established requirements of the American Board of Pediatrics.
3. Two years of residency training in General Neurology, including the basic neurological sciences, and under conditions consistent with es-

tablished requirements of the American Board of Psychiatry and Neurology.

4. A year of residency training in a pediatric neurology service meeting the established requirements of the American Board of Psychiatry and Neurology.

Flexibility should be allowed in the order in which these components of the training program are taken.

Training Program Facilities :

1. The pediatric neurology service should be in the setting of an active pediatric service with a sufficient number of beds for the number of residents in training and an active outpatient department. It is also recommended that there be opportunities for the trainee to study the newborn and that he also have opportunity to maintain continuing contact with patients in this category.

2. The pediatric neurology service should be under qualified neurological direction.

3. Patient beds assigned to the pediatric neurology service should preferably be in close physical contact with the pediatric service and under independent pediatric neurologic direction.

4. The pediatric neurology resident should have responsibility under competent supervision for patient care.

5. It is also desirable that the pediatric neurology program be in a setting in which basic neurological science contacts are readily available.

The adoption of these recommendations might serve as a preliminary step toward further consideration of a formalized subspecialty Board in Pediatric Neurology.

THE AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY, INC.—The following were certified at New York, N. Y., December 10, 12 and 13, 1960 :

PSYCHIATRY

Allen, John E., M.D., Lebanon, Pa.
 Bacher, Norman M., M.D., Baltimore, Md.
 Bartman, Richard E., A.B., M.D., Eldridge, Cal.
 Bazilian, Stanford E., B.A., M.D., Philadelphia, Pa.
 Benton, Owen D., M.D., Washington, Pa.
 Berg, Mary C., M.D., Madison, Wis.
 Bernstein, Stanley, M.D., New York, N. Y.
 Bindelglas, Paul M., M.D., New York, N. Y.
 Blau, David, M.D., Dorchester, Mass.
 Bluestone, Harvey, M.D., New York, N. Y.
 Braun, Manfred, M.D., New York, N. Y.
 Brodsky, Stanley H., M.D., Forest Hills, N. Y.
 Carson, Robert S., M.D., White Plains, N. Y.
 Chessick, Richard D., M.D., Chicago, Ill.
 Chester, Alice S., M.D., Oak Park, Mich.
 Claman, Lawrence, M.D., Brookline, Mass.
 Cohen, Kenneth D., M.D., Philadelphia, Pa.
 Curtis, George Clifton, M.D., Philadelphia, Pa.
 Dalgaard, Jens A., M.D., Philadelphia, Pa.
 Dean, Earl Frederick, M.D., Warm Springs, Mont.
 Dobbs, William H., M.D., Washington, D.C.
 Duncan, Marie C., Sc.M., M.D., Evanston, Ill.
 Durkin, Harry Anthony, Jr., M.D., Boston, Mass.
 Ekwall, Merton L., M.D., Jacksonville, Fla.
 Erbaugh, John K., M.D., Philadelphia, Pa.
 Errera, Paul, M.D., New Haven, Conn.
 Farber, Irving Joseph, M.D., Forest Hills, N. Y.
 Flagg, Glenn Willard, M.D., Los Angeles, Cal.
 Fleming, Burton A., M.D., M.Sc., Philadelphia, Pa.
 Forster, Eugene, M.D., New York, N. Y.
 Fowler, John A., M.D., Durham, N. C.

Freeman, David F., M.D., South Lincoln, Mass.
 Fuentes, Claude E., M.D., Hato Rey, Puerto Rico.
 Garlo, Olgierd C., M.D., Tiffin, Ohio.
 Geller, Louis M., M.D., Brookline, Mass.
 Ghent, Emmanuel R., M.D., C.M., New York, N. Y.
 Gould, Michael H., M.D., Great Neck, N. Y.
 Grayson, Robert S., M.D., New York, N. Y.
 Gross, George E., M.D., New York, N. Y.
 Grunebaum, Henry U., M.D., Boston, Mass.
 Hannum, William Young Conn, M.D., San Francisco, Cal.
 Haynes, Herbert Curtin, M.D., Bethesda, Md.
 Hekimian, Leon J., M.D., New York, N. Y.
 Heusler, Anton Frederick, M.D., St. Louis, Mo.
 Hoshino, Arthur Y., M.D., Warren, Pa.
 Hrushka, Myroslaw, M.D., Pontiac, Mich.
 Hull, George H., M.D., New York, N. Y.
 Ice, John F., M.D., Boston, Mass.
 Imboden, John B., M.D., Ruxton, Md.
 Jarrett, Lewis A., M.D., Hudson, N. Y.
 Jeppson, Janet, M.D., New York, N. Y.
 Kase, Lionel A., M.D., Chillicothe, Ohio.
 Keill, Stuart L., M.D., New York, N. Y.
 Kempf, John P., M.D., Ann Arbor, Mich.
 Kennedy, David Francis, M.D., Albany, N. Y.
 Kimball, Reid R., M.D., Salem, Ore.
 Kissel, Wesley A., M.D., Indianapolis, Ind.
 Kurke, Lewis, M.D., New York, N. Y.
 Lazar, Norman D., M.D., New York, N. Y.
 Lefer, Leon, M.D., New York, N. Y.
 Leopoldt, Gerd, M.D., Toledo, Ohio.
 Levine, Jerome Merrill, M.D., New York, N. Y.
 Lewis, Alfred B., Jr., M.D., New York, N. Y.
 Lipron, Merrill I., M.D., Newtown Square, Pa.
 Mallory, George Lorenzo, M.D., Los Angeles, Cal.
 Mannucci, Mannuccio, M.D., New York, N. Y.
 McLeod, Stuart Wilson, M.D., New York, N. Y.
 McNelis, Desmond P., M.B., Baltimore, Md.
 Meyen, William M., M.D., Beacon, N. Y.
 Monfort, Mariam Felicia, M.D., San Mateo, Cal.
 Montgomery, John Stuart, M.D., New York, N. Y.
 Moore, Richard John, M.D., Norwich, Conn.
 Moss, Leonard M., M.D., New York, N. Y.
 Myers, Morris, M.D., East Orange, N. J.
 Nadelman, Maurice S., M.D., New York, N. Y.
 Najera, Gabriel A., M.D., Dallas, Tex.
 Noordsij, A. Johan, M.D., Summit, N. J.
 Nunn, Robert Read, M.D., Chicago, Ill.
 Park, Lee Crandall, M.D., Baltimore, Md.
 Parks, John Hulbert, M.D., Charlottesville, Va.
 Perlstein, Abraham P., M.D., Brooklyn, N. Y.
 Phillips, Robert Nathan, M.D., Fullerton, Cal.
 Pogul, Stanley, M.D., New York, N. Y.
 Porter, John H., III, M.D., Newton Centre, Mass.
 Price, John M., Jr., M.D., New York, N. Y.
 Proano, Augusto, M.D., Sedro-Woolley, Wash.
 Reiser, David Emerson, M.D., Boston, Mass.
 Riley, Peter B., M.D., Canandaigua, N. Y.
 Robbins, Edwin S., M.D., New York, N. Y.
 Roukema, Richard William, M.D., Ridgewood, N. J.
 Ruff, George Elson, M.D., Philadelphia, Pa.
 Salaban, Bohdana, M.D., Buffalo, N. Y.
 Schmidt, Kurt T., M.D., Williamsburg, Va.
 Schulman, David, M.D., New York, N. Y.
 Schulman, Herbert Jules, M.D., New York, N. Y.
 Shore, Miles F., M.D., Needham, Mass.
 Siegman, Alfred J., M.D., New York, N. Y.
 Silber, Austin, M.D., New York, N. Y.
 Simopoulos, Aris Michael, M.D., Baltimore, Md.
 Smith, Thomas Heyward, M.D., Ridgewood, N. J.
 Snyder, Frederick M.D., Kensington, Md.
 Spector, Bernard, M.D., New York, N. Y.
 Stein, Myron L., M.D., New York, N. Y.
 Stoffel, Jack O., M.D., Denver, Colo.
 Takahashi, Yasuo, M.D., Sykesville, Md.
 Tucker, Kenneth Fredric, M.D., New York, N. Y.
 Ure, Barbara, M.D., New York, N. Y.
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 Walden, Heinz J., M.D., Norman, Okla.
 Weber, William Frank, M.D., New York, N. Y.
 Weil, John Leopold, M.D., Westwood, Mass.
 Wiggins, George E., M.D., Houston, Tex.
 Wills, Benjamin Charles, M.D., Savannah, Ga.
 Winer, Albert S., A.B., M.D., Washington, D. C.
 Zaldivar, Raul A., M.D., Chicago, Ill.
 Zirgulis, Justine, M.D., Chicago, Ill.

NEUROLOGY

Goodson, Michael Piers, M.D., Miami, Fla.
 Jampel, Robert S., M.D., Brooklyn, N. Y.
 Karp, Herbert Rubin, A.B., M.D., Atlanta, Ga.
 Keller, Niklaus J. A., A.B., M.D., Washington, D.C.
 Kinkel, William Revere, B.A., M.D., Tonawanda, N. Y.
 Low, Niels L., M.D., New York, N. Y.
 Millichap, Joseph Gordon, M.D., Rochester, Minn.
 Rapin, Isabelle, M.D., New York, N. Y.
 Reinmuth, Oscar McNaughton, M.D., Miami, Fla.

BOOK REVIEWS

AMERICANS VIEW THEIR MENTAL HEALTH.

By Gerald Gurin, Joseph Veroff and Sheila Feld. Monograph Series No. 4, Joint Commission on Mental Illness and Health. (New York: Basic Books Inc., 1960, pp. 444. \$7.50.)

Many attempts have been made recently to survey the extent and seriousness of mental and emotional disabilities among the American people. Other studies have been aimed at measuring the extent and quality of public understanding of mental illness. Still others have tried—usually without striking success—to arrive at a generally acceptable definition of mental health. The present study claims to be unique in that it is an effort, elaborate and comprehensive in conception, to gather information on what the American people think, subjectively, about their own mental health.

A basic assumption in this study, as with others undertaken by the Joint Commission, is that every person from time to time will experience psychological trouble. He will cope with this with varying degrees of success, by his own efforts or with help from someone else. Thus "mental health springs not from avoiding all stress . . . but from a capacity to accept normal amounts of stress with some ability to rebound."

These are surely vague, relative and shifting elements to appraise, whether in oneself or in others. After all, how much is a "normal" amount of stress and how can one measure "degrees" of successful coping? But the attempt to study how people rate *themselves* in this regard is defended on the grounds that "the needs of people—as they themselves feel them . . . and express them—ultimately determine the ways in which organized efforts will be made to meet these needs."

The study was conducted by the University of Michigan Survey Research Center. Well-established techniques, based on the probability sampling methods used in public opinion polls, were used. The sample population comprised 2,460 adults living at home, selected according to the usual demographic indices, (age, sex, education, income, occupation, place of residence, etc.) so that it was truly representative of the national population. The data were collected by trained interviewers who followed a carefully designed and tested questionnaire. Interviews were lengthy, averaging about 2 hours each. The resulting information was coded, and analysed according to modern

statistical methods.

In general two kinds of questions were asked. The first dealt with people's adjustment to life, whether they were happy or unhappy, worried or unworried, and their attitudes toward marriage, parenthood and work. The second kind of question dealt with what they do about their problems, what help they seem to need and from whom.

Whether "happiness" as judged subjectively has much to do with a person's mental health or not may be debated. Nevertheless the study showed that 89% of American people are either "very happy" or "pretty happy." The commonest sources of such desirable feeling were evenly divided between economic and material sufficiency on the one hand and children in the family on the other. Interestingly enough, relatively few people—about 4%—were worried or made unhappy by fear of international catastrophe, atom bombs and so on. In spite of the high incidence of happiness as reported in this survey, about 25% of the sample admitted that they worried "a lot" or "all the time." And about 20% felt that they had been close to a "nervous breakdown" at some time. Nearly 1 in 4 admitted having had personal problems sufficiently serious to warrant consultation with a professional person, but only 1 in 7 actually did so. Forty-two percent of these consulted clergymen, 29% physicians, 18% psychiatrists or psychologists and 10% social agencies of one kind or another. Of those seeking such help, 58% felt that they were definitely helped.

There is little evidence to support the idea that many people with troubles talk them out with the bar-tender, the taxi-driver or the fortune-teller. However, many do talk about their problems with their spouses, members of their family or their friends.

Dr. Ewalt, Director of the Joint Commission, believes that this study is probably the first piece of convincing evidence that public education in mental health principles has increased general understanding of the human mind and has led to a greater recognition of the psychological nature of many problems. This is particularly evident in the younger and better educated groups.

The study will obviously be of great interest to those concerned with public education, public information and the general epidemiology in the field of mental health and illness.

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A PHARMACOLOGIC APPROACH TO THE STUDY OF THE MIND. Edited by Robert Featherstone and Alexander Simon. (Springfield, Ill.: Chas. C Thomas, pp. 397. \$10.75.)

The enormity of information given to us in the 12 printed pages comprising Aldous Huxley's contribution to this volume, is quite unbelievable. He shows us how this volume really comprises 41 books which we all need to read if we are to practice a modern 1960 brand psychiatry, since each man who presented a paper at the symposium at the University of California could have produced a book on his topic. However, each was compelled to concentrate into a minute volume all his facts for presentation to this congress of scientists.

Thus, in much the same manner that Huxley uses to make his point about "Hedgehog" (condensed) science versus "Fox" (all encompassing) science, one can envisage this book as a collection of hedgehog condensations or capsules (poems) of knowledge in this new frontier for psychiatric expansion.

It is indeed exciting (after 35 years in psychiatry) to read Joel Elkes' scholarly presentation of how far we have gone already in "Some Points of Reference in Psychopharmacology," when we still think of this field as so new and unexplored in psychiatry; and "The Effects of Drugs . . . on the Energy Metabolism of the Brain" by Seymour Kety; and Sidney Udenfriend's brief on "Psycho Chemistry" wherein he points out that, "Within recent years it was shown that Iproniazid . . . could indeed interfere with serotonin and noradrenalin metabolism" and "We have found a remarkable agreement between the dosages worked out by psychiatrists, through trial and error, and the dosages needed for maximal inhibition of mono amine oxidase in man."

Then President Malamud's final comment in his discussion of "A Clinical Approach to Mental Disease": "To the clinician this is very exciting . . . and highly promising in spite of occasional controversy. The pragmatically oriented medical practitioner will do well to maintain an objective attitude" (while developments continue in this field).

The most unsophisticated novice in the field of biological chemistry will realize from a casual reading of Albert Zeller's succinct chapter, "The Concept of Enzymes . . .," the inescapably intimate relationship of the enzymes to this new and most fruitful field of research. The romantic description of his years of slow painstaking delving into this new biochemical frontier cannot fail to whet the appetites of investigative minds, with the realization that

better than platinum or uranium equivalents in the knowledge of human disease lie in the revelations to come, to the researcher who can fathom the depths of this exceedingly complex wilderness of biological chemistry.

This book makes a most interesting new departure by presenting 6 pages of candid camera photos of the various authors.

All those who listened intently as Ralph Gerard delivered his Academic Lecture to all APA listeners only a few years ago, will want to peruse his further thoughts at this time.

Nothing is available in the literature to equal Nathan Kline's exhaustive survey of the current literature concerning "Therapy with Psychic Energizers" plus his own invaluable comments in this field which he pioneered with his collaborators. This chapter alone is worth the price of the book.

In his excellent summarization consisting of 5 printed lines, Dr. John B. Saunders, Dean of the California School of Medicine, wisely advises the reading of Dr. John C. Saunders' chapter "Psychic Energizers: A Source of Psychopharmacological Theories"—an astute capsular summarization indeed, and a gem of scientific effluence.

Many equally worthy chapters are not mentioned here purely because of space restrictions. But I believe there is no more essential book for every psychiatrist to possess than this—and likewise for every internist or other physician using modern chemotherapy for psychiatric illness, the book is a *must*!

The only obvious defect I encountered in reading this book was the absence of any statement by any of the many authors, stressing the need for keeping accurate data on blood transaminase findings in all cases being administered energizer chemotherapy. It would be most unfortunate if this observation, which I have stressed in a number of papers, was ignored by the vast body of clinicians who are administering the various antidepressant chemicals in ever increasing quantities today. The warning sounded by discovery of an elevated SGO-T or SGP-T which results in prompt interruption of the medication, or sharp reduction in dosage, has undoubtedly saved many doctors from serious embarrassment that might have developed if serious side effects had developed. Especially in these early days when the groundwork is being built for the psychopharmacology of tomorrow, and perhaps for years to come, the clinician needs to be fully informed regarding every laboratory or other adjunct that will increase his skill and also will enhance the safety of his patient.

I shall consider it one of the major additions

to my library wherein Freud's Collected Papers were considered the major indispensable item 30 years ago, and Menninger's various volumes some years later.

THEODORE R. ROBIE, M.D.,
Montclair, N. J.

AN MMPI CODEBOOK FOR COUNSELORS. By L. E. Drake and E. R. Oetting. (Minneapolis: University of Minnesota Press, 1959, pp. 140. \$3.75.)

The authors have produced a very useful manual for the counselor of the normal, young adult. Based on research conducted between 1945 and 1957 with over 4,000 students who were counseled at the University of Wisconsin, personality characteristics associated with various MMPI profiles are presented.

Introductory sections present a thoughtful approach for the use of psychometric data in counseling, and discuss the research from which the codebook was developed.

BERNARD LUBIN, Ph.D.,
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LE RAZZE E I POPOLI DELLA TERRA. Edited by Renato Biasutti. 4 vols., 3rd ed. (Turin, Italy: Unione Tipografico-Editrice Torinese, 1959. Lire: 36,500.)

There is nothing like these four anthropological volumes in any language. They cover the whole world of mankind from the beginning of his history down to the present time in all the wide variety of his different phases, both physically and culturally. There are literally thousands of illustrations, many in full color, maps, tables, and extremely readable discussions of man's psychological, physical, and cultural traits. The various sections are written by Italian experts in the fields in which they write, and the appeal of these volumes is to the general reader as well as the student. The bibliographies and author and subject indexes are excellent, and altogether these are most admirable volumes which will long serve the most useful purpose of emphasizing the fact that the proper study of mankind is man.

ASHLEY MONTAGU, Ph.D.,
Princeton, N. J.

THE DANCE. By Joost A. M. Meerloo. (Philadelphia & New York: Chilton Co., 1960, pp. 152. \$4.95.)

The pictures in this book are worth the price of the book. Of the text by Dr. Joost A. M. Meerloo the less said the better, for it was obviously written without any recourse to authoritative sources, and is entirely lacking in

those dimensions of understanding which only the anthropologist can provide. The subject is an important one, and therefore it is good to have this book for, even though it be textually inadequate, it is so continuously the source of disagreement and doubt that it will give the reader furiously to think. It would not be unfair to Dr. Meerloo to cite some of his typical opacities in view of the fact that his brief text and comments are so bestrewn with them—but I shall refrain. As I have said, the pictures make the book very worth while—the banality of the text cannot detract from them. Those who are interested will find both interesting.

ASHLEY MONTAGU, Ph.D.,
Princeton, N. J.

THE OPEN AND CLOSED MIND. By Milton Rokeach. (New York: Basic Books, 1960, pp. 447. \$7.50.)

This rather well produced book reports in detail the results of a series of studies carried out by Rokeach and his students in pursuit of the measurement and the correlates of "dogmatism" and "opinionation." Their work is essentially and confessedly a derivation from the well known studies on the authoritarian personality. As many critics had pointed out, authoritarianism in the original work was entirely right-wing or Fascist authoritarianism; Rokeach has tried to redress the balance by concerning himself with dogmatic and opinionated personalities such as might be found right, left and centre, and indeed, in many fields quite unrelated to politics. Two scales entitled "Dogmatism" and "Opinionation" were accordingly constructed and shown to be reasonably reliable and not highly correlated with radical or conservative views. These scales were administered to many different groups in the United States as well as to some small British samples. The results are presented in a context of theorising so prolix, and at the same time so woolly, as to defy a brief summary.

Some of the results are of psychological interest, particularly those in which the author has tried to relate scores on his scales to the subject's method of attack on certain experimental problems. There are, however, a number of criticisms which have to be made and which very much reduce the acceptability of his conclusions. In recent years the authoritarian studies have been severely criticized because no attention was paid to the problem of "response set," i.e., the tendency of people to endorse certain types of responses irrespective of the content of the question. There is ample evidence for the existence of such sets and their relevance to work of this kind, yet they

are only mentioned very briefly and inadequately at the end of the book and the writer is forced to conclude that unless the proper analysis of such response sets is carried out "... we will not be able to tell for sure, what role 'response set' has played in our research." The reader may justly wonder why such a simple and crucial experiment was not done, and how he can be expected to interpret data which, in the author's own view, apparently cannot be interpreted.

Other doubts arise with respect to the statistical treatment of the data which is, at best, uninspired and, at worst, unacceptable. As an example of the writer's uninspired way of treating the data we may mention the fact that no where is Multiple Discriminant Function Analysis used, although several of the experiments cry out for something a little more sophisticated than simple t tests. As an example of the unacceptable, consider Table 19.8 in which means are given for three groups of the age at which bedwetting stopped. The mean age for the dogmatic group turns out to be 6.2; that of the non-dogmatic group, 2.2. This looks interesting until it is realised that of the 25 people in the non-dogmatic group, 21 replied that they did not remember, and that the author quite arbitrarily assumed that this reply could be set as equal to two years for the purpose of establishing the mean age! The difference between the groups, therefore, is produced entirely by this purely arbitrary decision for which no rationale is given. This table will for evermore become a cherished part of my lecture on the abuses of statistics, given every year to incoming students.

The book as it stands cannot, for the reasons given, be considered a notable contribution to social psychology. If the author had taken seriously his responsibilities to solve the problem of "response set" as applied to his scales, and had got a statistician to go over his tables, the resulting book might have been interesting or even important. It seems a pity that the urge to publish was apparently too strong to make it possible for him to undertake these small additional chores.

H. J. EYSENCK, M.D.,
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England.

LIFE AGAINST DEATH. By Norman O. Brown.
(Middletown, Conn. : Wesleyan University Press, 1959, pp. 366. \$6.50.)

THIS is a book that links Freud's death instinct concept with religion, with man's destructiveness, and with his need for salvation.

The psychiatrist is apt to encounter it when his patient enters, anxious and trembly, and demands an answer to Dr. Brown's apparently telling logic. The fact that all of these topics are speculative, to say the least, is overlooked by the author and is apt to be overlooked by the easily misinformed layman. Evidently Dr. Brown has encountered Freud rather late in life and embraces him with a passion and uncriticalness of a middle-aged fling at romance.

The cornerstone on which this book is erected is the psychoanalytic concept of repression. Once having shown it to be a bad thing and having documented man's many woes caused by his repressive tendencies, the author's next obvious step is: what is the way out? Here in a brief, final chapter, we are given the old concept of redemption through expiation dressed in a modern, existentialistic frame. On the way to this denouement, there are many unsettling passages including the statement that the whole human race is neurotic and quotes from philosophers from Plato to Whitehead, bent a bit to fit the author's thesis. Yet this is obviously a sincere book and being critical of Dr. Brown's efforts makes me as guilty as punching holes in CARE packages. Yet a book like this can cause a good deal of alarm because it is a serious well-intended effort and this stamp is easily mistaken for veracity. I note my copy is the third printing so I must assume that attempts to join psychoanalysis and religion into a palatable gruel is still quite popular. There have been many more dispassionate and less passionate attempts than the volume under consideration.

DON D. JACKSON, M.D.,
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DISEASES OF THE NERVOUS SYSTEM IN INFANCY, CHILDHOOD AND ADOLESCENCE. By Frank Ford. (Springfield, Ill. : Charles C Thomas, 1959, pp. 1548. \$29.50.)

Doctor Ford, in his fourth edition on pediatric neurology, has maintained the high quality of this concise encyclopedic reference volume. The author has fully justified the additional 350 pages in the new edition (1,548 pages as compared with the 1,181 of the 3rd edition) in meeting the important advances of pediatric neurology since 1952. Chapter I of the previous edition on "The Examination of the Nervous System" has been omitted. Some might believe that the author could have more appropriately omitted the section on neuro-anatomy or cut back on some of the other chapters so as to have included the recognized important chapter on Examination. On the other hand,

because of the important advances that have been and are being made in neuro-anatomy and neuro-physiology and their increasing clinical contribution to pediatric neurology, this reviewer believes the author can justify deleting the chapter on Pediatric Neurological Examination, available in other textbooks on child neurology and which do not serve the encyclopedic and extensive reference book purpose singly covered by this book.

The edition brings up to date the new advances in the prevention and treatment of neurological disorders as, for example, the Salk vaccine for prevention of poliomyelitis and several additional drugs now available in the treatment of tuberculous meningitis in addition to the one streptomycin mentioned in the 3rd edition and the more recent drugs for the control of the epileptic disorders. Many advances in the diagnosis and treatment of neurological disorders in infancy and childhood are apparent in the chapter on toxic and metabolic disorders enlarged from 155 in the 3rd edition to 225 pages in the current edition. This includes such new subjects as disorders of protein metabolism, familial amyloidosis and the different forms of cerebral sclerosis. There are additional practical subjects on insect, snake and fish bites.

The author's chapter on "Psychogenic Disorders Simulating Organic Disease of the Nervous System" could be expanded into the field of neurology of behavior in the light of our contemporary advances in the structure and function of the nervous system between relating behavior to the nervous system, particularly with respect to the rapidly maturing brain of the infant and child. Perhaps the author in a future edition may well require 2 volumes to include the deleted chapter on the neurological examination and extending the chapter on psychogenic disorders into a discussion of behavior disorders of the infant and child and their relation to neurology.

This reviewer concludes that there is currently no book in pediatric neurology which so ably and comprehensively covers this subject, in addition to being an excellent reference book on the subject. It continues an essential library tool to all neurologists and to pediatricians interested in the neurological disorders of infants and children. As a child's behavior symptoms and signs may require the differential consideration of neurological and/or environmental etiological factors, this book has an essential place in the library of child psychiatrists.

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BEHAVIOR AND PHYSIQUE. By R. W. Parnell, M.A., D.M. (Baltimore, Md.: Williams and Wilkins, 1958, pp. 134. \$7.00.)

This may be a difficult book for the average American psychiatrist to read, perhaps because of his relatively limited knowledge of or interest in constitutional aspects of psychiatry. The author's method of somatometry is closely related to that of Sheldon's and can be viewed in some respects as an extension of the latter. As such the author deals relatively briefly with Sheldon's methods as an introduction to his own. If his American readers are not sufficiently acquainted with the concepts and descriptive devices utilized by Sheldon, they may find themselves burdened with the task of having to learn about 2 methods, the understanding of the second of which is dependent upon familiarity with the first. The author's style of writing is concise, concentrated, and demanding of the reader's attention at all times. Furthermore, the author has a curious predilection for combining a summary with some discussion of topics previously unmentioned. Nevertheless, for those who are interested in its subject matter, this book is a worthwhile addition to a library.

In the matter of estimating somatotype, the author states his aim as "giving an index that will remain constant throughout life," despite the variation in measurements and proportions occurring in different age periods. He does not claim to have achieved this aim nor is he even sure that it is achievable. His methods consist of physical anthropometry in conjunction with photography. His shorthand descriptive system is simpler than that of Sheldon; he utilizes the terms fat, muscularity, linearity as the 3 essential somatic components. Furthermore, he includes only 2 of these in his actual description of individuals, with the dominant component coming first and placed in capitals (i.e., F1 or Lf, depending on which is dominant). He has studied a relatively large number of individuals and takes up the questions of civil state, variety of human matings, fertility, sex ratio of children, academic performance, selection of occupation, and susceptibility of individuals to mental illness at various ages, all with reference to somatotype. For example, in his series, Mf types form the most stable group in both sexes. Lf types are most disposed to breakdown before 25 years of age, whereas Lm types are the most susceptible from 25-34. The Lf type, along with F1 in women and Lm in men, is found in a large proportion of younger schizophrenic patients. Lf men are found to do well academically despite their susceptibility to emotional disturbance.

The author suggests that somatometry may become a useful adjunct to other methods of clinical observations. To this reader the book was stimulating if only because it brought into focus the ~~extent~~ to which ~~the~~ ~~entire~~ subject appears to be neglected by American psychiatrists. It is entirely possible that with the increasing interest in constitutional and biological aspects of psychiatric illness this situation may change. At the moment, the book must be recommended as a thoughtful and scholarly work, tentative in its conclusion, and of special interest to those who tend to consider the constitutional as well as the psychological aspects of emotional disorder.

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MENTAL DEFICIENCY. Edited by Ann M. Clarke and A. D. B. Clarke. (Glencoe: The Free Press, pp. 513. \$10.00.)

This book is a collection of 18 papers, organized and edited in such a fashion that it can serve as a basic reference book on mental deficiency. Most of the authors are British psychologists, and the book is written primarily for psychologists. After presenting their basic considerations and some epidemiological data, they describe the theoretical and practical problems in the clinical field. The book has 3 aims: to summarize the literature on the psychological and social aspects of mental deficiency against the background of genetics and neuropathology; to show the intimate and reciprocal relationship between theory and practice, together with the use of experimental methods in both areas; and to indicate in a practical manner how the learning defects and social problems posed by the subnormal may be ameliorated.

There are few comprehensive books on mental deficiency. Some written by physicians, for physicians, emphasize the medical aspects. To psychiatric readers, acquainted with these publications, the present book will serve as a guide on the psychological, educational, and sociological problems of the field. They will likely find the information pertaining to medicine quite limited and somewhat out-of-date, particularly that relating to the etiology of mental defect and to the methods of biological treatment. Present-day treatment of such conditions as phenylketonuria and galactosemia, and the use of psychopharmacological agents and other drugs, are described quite briefly. However, several very excellent chapters will adequately compensate the reader for this lack.

Each chapter on different aspects of this subject summarizes the pertinent literature, together with critical comments on the articles reviewed. These discussions give an excellent historical account particularly of the work of psychologists and sociologists. The lack of factual information is repeatedly emphasized, with some suggestions for desirable research approaches.

This reviewer was particularly impressed with the discussion of some topics; for instance, the brief section of pseudo-feeble-mindedness clarifies many issues of diagnosis and prognosis. The authors emphasize that "pseudo-feeble-mindedness" involves mistaken prognosis, rather than diagnosis. Equally good is the chapter on learning and mental defect, in which clear differentiation is made between the broad clinical syndrome of mental defect and the deficit in learning ability. The excellent chapters on brain damage and cerebral palsy discuss these syndromes and their relationship to intellectual impairment.

Part III on "Practical Problems" describes many of the issues encountered in the daily clinical practice with the mentally deficient. The comments are applicable to private practitioners, to those in public institutions, or in school settings. The chapter on speech disorders—the most common handicap in the mentally deficient population—classifies these conditions by etiology and describes speech therapy and other corrective techniques in simple, easily readable language.

A considerable amount of scientific information is combined with practical suggestions. The book conveys the personal warmth the authors feel toward the deficient patient and reflects years of experience in research and in clinical work in close collaboration with physicians. It conveys the authors' optimistic outlook toward the problems of mental deficiency; a sense of worthwhileness of professional investment in therapeutic endeavors; and an image of good social prognosis, particularly for the mildly defective individual. Clinicians will appreciate this overtone.

The book should be an excellent addition to the library of any psychiatric institution, or to any facility dealing with problems of mental deficiency. It should serve as a good reference book for practicing psychiatrists who want to become acquainted with this major psychiatric problem. It should be required introductory reading for clinical psychologists starting work with the mentally deficient.

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A COMPARATIVE STUDY OF ANTIDEPRESSANTS IN
BALANCED THERAPYDAVID C. ENGLISH, M.S., M.D.¹

This report is part of a larger comparison study of approximately 1,800 private psychiatric patients. Iproniazid² (INZ) was employed in 180 patients, 228 patients were treated with phenelzine,³ 86 with imipramine,⁴ 62 with nialamide,⁵ 71 with phenylcyclopropylamine,⁶ 51 with deanol,⁷ 59 with benactyzine-meprobamate,⁸ 842 with electroconvulsive therapy, 195 with isocarboxazid (ICZ),⁹ and 32 with a combination of ICZ and INZ to further expedite recovery. In a previous paper⁽¹⁾, the author reported both clinical results and side effects with 223 patients treated with INZ, the parent drug of which ICZ is an analog. In that 18-month series, discontinuance of INZ was never required and edema in 3 cases was the only side effect noted. The INZ series consisted primarily of inpatients; at that time no effective means of treatment of moderately severe depression was known other than ECT, and there were natural reservations about trying drugs alone on an outpatient basis. ICZ results in agitated depressives were so good that routine outpatient treatment became feasible.

Clinical results in patients with depressive and acute schizophrenic reactions treated with ICZ have shown it to equal ECT, to usually initiate improvement within 3 to 7 days and to have no serious and few minor side effects. The median INZ patient showed a considerable improvement in 26 days; with ECT alone there was improvement in 22 days; in contrast, the ICZ pa-

tient exhibited a 50% reduction of symptoms in 10 days. Because of the greater rapidity of action of ICZ, it was possible to treat over half of this series on an outpatient basis, with no hospital facilities being required other than laboratory studies done biweekly as an extra precaution.

The author has previously shown that combined INZ and tranquilizing drugs, such as chlorpromazine¹⁰ or mepazine,¹¹ in simultaneous medication ("up down drugs") maintained control in agitated depressives during their rehabilitation⁽¹⁾. The combination with tranquilizers permitted treatment of acute schizophrenics who became too combative on antidepressants alone. INZ premedication reduced necessary ECT's by 1/3 (2-3). Combinations of tranquilizing drugs (chlorpromazine-mepazine⁽⁴⁾, chlorpromazine-prochlorperazine⁽¹²⁾ (1, 5), have shown additive therapeutic effects with no increase in side effects. The present paper shows that the more rapidly acting ICZ was even more effective than INZ in depressed patients, and that ICZ with INZ (32 cases) produced fewer minor ("nuisance") side effects than equivalent amounts of either alone. The "balancing" of simultaneous antidepressants, in turn balanced against 1 or 2 tranquilizing drugs, provides the first means of predictably expediting private patient therapy without ECT. Comparative results with the various antidepressants used are shown in Table 1.

The author prefers to call this approach "balanced therapy" as opposed to the so-called "broad-spectrum therapy" (6). "Balanced therapy" consists of using all relevant therapies from the beginning, with inter-views, drugs, and (occasionally) ECT or

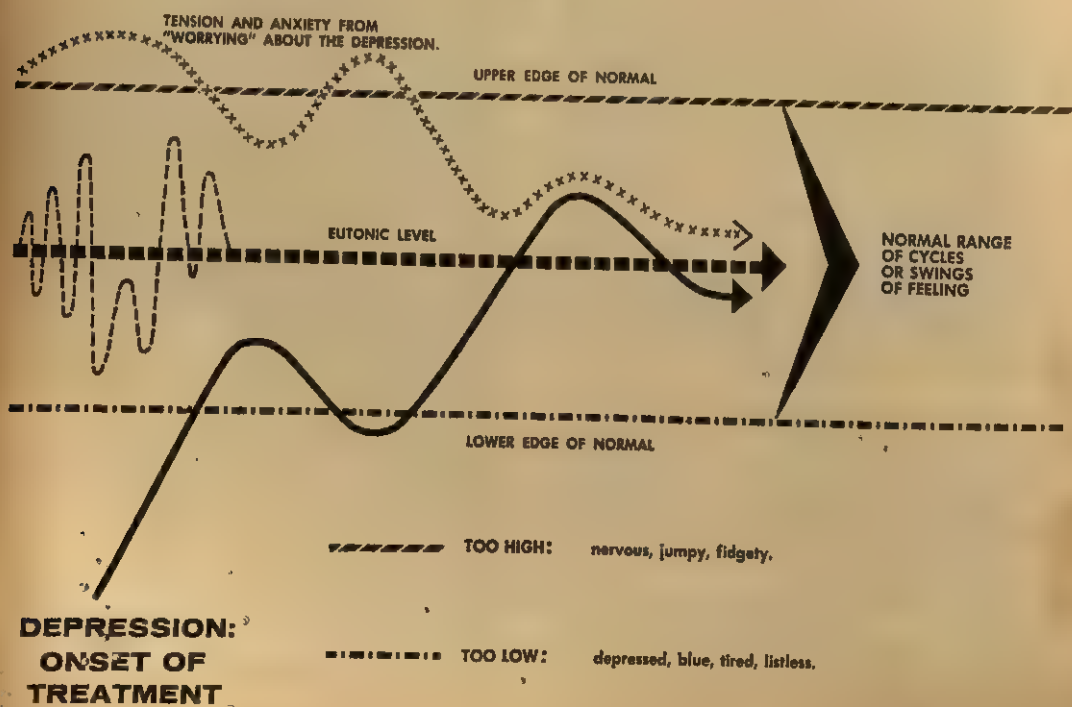
¹ 606 W. Michigan Ave., Jackson, Mich.² Marulid—Hoffmann-LaRoche Inc., Nutley, N. J.³ Nardil—Warner-Chilcott Laboratories, Morris Plains, N. J.⁴ Tofranil—Geigy Pharmaceuticals, Ardsley, N. Y.⁵ Niamid—Pfizer Laboratories, Brooklyn, N. Y.⁶ SKP-385—Smith Kline & French Laboratories, Philadelphia, Pa.⁷ Deanol—Riker Laboratories, Inc., Northridge, Calif.⁸ Deprol—Wallace Laboratories, New Brunswick, N. J.⁹ Marplan—Hoffmann-LaRoche Inc., Nutley, N. J.¹⁰ Thorazine—Smith Kline & French Laboratories, Philadelphia, Pa.¹¹ Pacatal—Warner-Chilcott Laboratories, Morris Plains, N. J.¹² Compazine—Smith Kline & French Laboratories, Philadelphia, Pa.

TABLE 1
DEPRESSIONS

Agent	Dosage (mg.)	Treatment (Days)	No. of Patients	Per cent Rehabilitated	Side Effects
Isocarboxazid	10 t.i.d.	3-15	195	91	Occasional slight hypotension
Phenelzine	15 "	4-24	228	88	
Iproniazid	25 "	7-28	180	81	
Imipramine	25 "	8-40	86	71	Hypotension, rare nausea, 1 case severe edema
Nialamide	25 "	5-20	62	73	Rare moderate hypotension
Phenylcyclopropylamine	10 "	1-10	71	54	Some weakness after exertion
Deanol	25 "	30-120	51	45	Occasional hypotension, some nausea
Benactyzine-meprobamate	1 " & h.s.	35-42	59	41	None (used only in mild cases—ineffective in severe episodes)
Isocarboxazid & Iproniazid	10-30)*	3-15	32	94	Initial hypersomnolence
Isocarboxazid placebos	10-75)	3-15	49	35	Hypotension
ECT	Standard A.C.	5-30	842	90	
					Tension, dizziness, lethargy
					Fractures, apnea, marked memory loss, muscle soreness

* Dosage highly individualized because of severity of illnesses.

FIGURE 1



hospitalization initially combined, the types and amounts depending upon the patient's needs and his environment. Drugs and ECT are not used as "additional physiodynamic levers" in patients subsequently found resistant to psychotherapy(6) nor is this "shotgun therapy," since each agent has a predetermined role. With experience, drug changes based on "balancing" action produce the expected result more accurately than do single drugs alone. Here a change in one drug almost always requires a corresponding change in at least one other. The different therapeutic factors can be synergistic only if complete flexibility is maintained, the quantity and variety of each treatment component being necessarily partially governed by the others and different for every patient.

Figure 1 represents a schematization of "balanced" drug therapy according to the clinical course of depression; the sample curve shows the effect of reducing the ICZ dosage 1 to 2 days too soon, and then, to make sure that the patient maintains recovery, carrying it too high for 2 extra days. This type of chart has been found helpful in explaining to patients the type of illness, the rationale of the drugs, and the progress achieved with them.

The relatively new class of amine oxidase inhibitors produced remarkable results when correctly used. ICZ is emphasized because it is both the newest and most effective as judged from results in studies with 8 such drugs and ECT in approximately 1,800 private patients with placebo controls. No attempt is made to say that ICZ is a "cure-all," but as judged in depressed patients, its use produced more obvious improvement than interviews, ECT, or hospitalization alone. It showed the strongest predictable antidepressant action, and could be used on a continuous basis in minimal doses when required (rarely) as a maintenance therapy. Likewise, combined use of antidepressant and ataractic ("up and down") drugs is emphasized only because agitated depressives and disturbed acute schizophrenics require ataraxic-controlled activation to avoid the panic and assaultiveness produced with energizers alone(1, 3).

Numerous reviewers have demonstrated the errors in over-enthusiastic, under-con-

trolled clinical drug evaluations, some as succinctly expressed as: "Results always seem to be good with the 500 new pills left by the salesman"(7). Blind studies with placebo controls are widely used as the best method of reducing subjective evaluations by both patients and doctors. The present study utilized identical inactive placebos; in addition, the 2-year consecutive series of patients, with different drugs added in groups with long subsequent follow-ups, allowed each patient to act as his own control. Since there were regular rotations of what originally appeared to be equivalent drugs, the "therapeutic zeal" and personality of the physician were identical factors for all drugs, leaving only the differences between the various antidepressants—which were considerable—as the explanation for the differing results.

Patients were followed for at least 4 weeks after discontinuance of medication. These were all private patients, interviewed at least weekly, and often 3 times a week. A complete physical and laboratory examination preceded the therapy, with a routine urinalysis, Hb, WBC and alkaline phosphatase, the last 3 tests being repeated bi-weekly thereafter. The patients on ICZ were started with 10 mg. t.i.d. p.c. Divided p.c. dosage minimized any hypotension and tranquilizer "reinforcement." Dosage was usually decreased at a rate depending on improvement.

Dosage is as important as the type of drug being used. This is true of all potent compounds, and is well illustrated by serotonin, where small doses excite cortical synapses while larger doses inhibit them, thus reversing the increased electro-cortical potentials produced by the lower dose.

NEUROPHARMACOLOGIC MECHANISMS AND EFFECTS OF ISOCARBOXAZID INTERACTION WITH BARBITURATES AND NEUROLEPTICS

Amine oxidase inhibitors so obviously potentiate barbiturates that this property has been made the basis of the most common method of amine oxidase determinations in laboratory animals, namely, the extent of sleep prolongation following the administration of standard barbiturate dosages. This effect presumably occurs largely in the liver and results from blocking the

amine oxidase breakup of the barbiturates.

Since ICZ was the strongest antidepressant, its "potentiating" effect on other drugs would be presumed to be high in assisting (or interfering) with therapy, depending on what was desired. Although a small but definite amount of tranquilizer "reinforcement" is probably always present with ICZ, this has not been sufficiently great to necessitate neuroleptic dosage reduction. If both are used together, as is necessary in all agitated depressives and schizophrenics, the potentiation is present all the time, but does not produce a noticeable change from the tranquilizer dosage used in equivalent patients not on ICZ.

In addition to INZ's known mood-elevating effect, both tranquilization and a "neutral" response have frequently been reported from the use of INZ alone (8). The early rise in serotonin (5HT) levels and a later increase in norepinephrine (NE) have been observed (9), the 5HT increasing before any mood-elevation has become evident. The subsequent NE rise correlates fairly well with the appearance of clinical improvement in the depression. Many INZ patients have appeared calmer shortly after beginning the drug:¹³ their agitation was temporarily reduced from INZ alone, then reappeared and persisted until clinical depression improvement appeared. The "tranquil" effect, when present, occurred twice as fast as depressive improvement, and as will be described, can be deliberately used to improve phenothiazine control of agitated patients.

Tranquilization from INZ alone approximately correlates with a serotonin increase; mood elevation coincides with norepinephrine. Since the 5HT rise persists during the NE increase, it is reasonable to explain part of the obvious difference between amphetamine and INZ actions as a persistence of a mild tranquilization effect during the "stimulation" produced by INZ (10).

A temporal correlation of NE with mood elevation and 5HT with calming does not

necessarily imply a direct causation. The 5HT-NE and clinical changes can be "epiphenomena"—factors appearing to vary together, but both actually responding to the same basic cause, not yet elucidated, variations in it alone producing changes in both anxiety/depression response and 5HT/NE levels. ICZ shows this same "stimulation after tranquilization" effect as INZ, the sequence taking 3-5 days in contrast to the 10-20 days with INZ. The calming action of ICZ itself appears to be the biggest factor in the moderately increased sedative effect when tranquilizers accompany ICZ.

A great deal of concern has been evidenced in the literature about tranquilizer-sedative-alcohol dosage reduction in the presence of amine oxidase inhibitors. The above direct tranquilizer effect of ICZ appears to be the largest factor in this "potentiation." As has been mentioned, this effect is not great enough to require more than moderate reduction of tranquilizer dosages, and even failure to do this does not cause severe adverse effects.

ICZ's "double action" illustrates why it can both lift a depression and calm a moderately anxious person when used alone. The ICZ calming effect is not strong enough in a very agitated person, so it has to be increased by added tranquilizers. ICZ "over-stimulation" results only when the dose is "pushed" to gain the fastest possible improvement, or when it erroneously is not reduced as the patient is improving. A second purpose of simultaneous tranquilizers is to provide "insurance" control of "over-stimulation" if it accidentally occurs. This is unnecessary in the great majority of patients, since reasonably precise ICZ dosage control is entirely sufficient. ICZ, unlike ECT, stimulants, or therapeutic psychotomimetics (e.g., JB-329),¹⁴ can lift a person predictably above himself to carry him through crises or to help him face and get started in especially important situations when anticipation is more upsetting than realization; unlike stimulants, subsequent reduction of ICZ dosage does not produce a drug-rebound depression. Since it is better to have a patient more sedated than in a near-panic from "over-activation," the de-

¹³ Patients taking both phenothiazines and antidepressants often notice increased lethargy immediately after an increase in the latter alone; from this they naturally conclude that the amine oxidase inhibitor is the tranquilizing half in the combination, and then unfortunately later may decrease it if they feel too tired.

¹⁴ Ditrin, Lakeside Laboratories, Inc., Milwaukee, Wisconsin.

liberate intent in "balanced" therapy initially always is to keep the patient on the "calm" side of the tension-depression continuum.

If a patient is extremely disturbed and not controlled with high doses of multiple phenothiazines, occasionally the addition of even 10 mg. of ICZ daily will provide improved control. The "potentiation" of a large phenothiazine dose by a minimal amount of ICZ is clinically greater than the expected activational effect. A possible explanation for this paradoxical effect is through Hess' thyrotropic-ergotropic control mechanism(11, 12) as adapted by Brödie(9). A high dose of chlorpromazine produces a relatively complete ergotropic (norepinephrine) blockade, but has no effect on the sedative trophotropic (serotonin) mechanism. ICZ would usually increase both NE and 5HT levels, the elevating action of NE being the more obvious one clinically. Since chlorpromazine blocks any NE stimulation, ICZ then produces only an increased serotonin level and a consequent reserpine-type tranquilization through trophotropic stimulation. This paradoxical or "reverse" tranquilizer effect of ICZ is useful in this special situation but is obviously not applicable with low tranquilizer doses since enough phenothiazine must be present for a complete norepinephrine blockade. A controlled motivational system is basic in the human, whether anxious, eutonic or apathetic, but shows marked dysfunction in depressive syndromes(10). Since activators and tranquilizers affect this system in opposite directions, it would seem that these drugs would cancel out, but in clinical practice effective doses of each exerts the usual effect in the presence of the other.

There was no evident change in seizure threshold in patients given ECT while on INZ, nor is there with ICZ. Although theoretically alcohol would be considerably potentiated by ICZ, thus decreasing a patient's capacity for drink, in practice the change in tolerance is minor and less than the chlorpromazine potentiation of alcohol. In fact, a review of 5 patients who drank while taking ICZ (the alcohol was their idea) showed they could drink more during the evening and retain better control. ICZ

is also by far the best treatment for a "hangover," but since it must be started the week before, this property of the drug is useless therapeutically.

ICZ's improvement of "hangovers" has to be thought of when prescribing it for a patient with a history of alcoholism. Since drinking, with its escape from responsibility, has long been psychoanalytically recognized as a depressive equivalent, this problem often arises(13). If the depression is acute and definite, INZ will usually bring improvement before the facilitation of alcohol is noticed. If it is chronic or the diagnosis tenuous, the patient may very well use the drug only to help maintain his drinking by reducing "hangovers," thus increasing the ease of escape.

SCHIZOPHRENIC REACTIONS

ICZ with a supporting neuroleptic provides good symptomatic improvement in acute illnesses of depression and withdrawal, but in addition to therapy it simultaneously and accurately delineates diagnosis, prognosis, ego strength and adaptability through comparisons of clinical changes with dosage. Because of their ego fragility, acute schizophrenics provide good examples of how ICZ response can measure personality resiliency. However, and more importantly, they are the patients whose ego tolerances must be known in advance by the physician since an antidepressant overdose can release confused and erratic behavior in all acute schizophrenics except the severe paranoids. The latter's illness has abruptly reached the epitome of rigidity and these patients have already erected the supreme and final defense to avoid the necessity of fighting off (adapting to) successive stresses through developing a stronger defense for each one.

The "supreme defense" is universal and all-inclusive: the patient never is bothered by further conflict or ambivalence. The total displacement of retaliating super-ego onto the outside world permits him to live in and near conflict but to be affectively (emotionally) detached. His "reasoning" is rational (if one accepts the premises with which he starts) and is self-perpetuating since each apparent social deprivation only re-enforces it still further.

Once the "supreme defense" stage has been reached, the patient has become self-ambulant (but for very "sick" reasons). ICZ cannot reverse his paranoid trend (there is no therapy that is very effective in doing this), and could only speed up his behavior with unpredictable results. Neuroleptics slow such a patient but do not change the mechanism either. However, for all stages of acute schizophrenic illnesses including early and acute paranoid ones, ICZ with a neuroleptic produces good results without the memory loss and relapses of ECT.

A patient with acute catatonic schizophrenia of 3 weeks' duration has almost as good a prognosis as one with an acute depression of the same duration. However, the ego boundaries of the depressive are sufficiently stronger that ICZ can often be used alone, whereas the schizophrenic fragility requires cautious ataraxic-controlled activation. With such control an equal amount of ambulating therapy can be given the schizophrenic.

Table 2 shows the somewhat less effective results of the drugs in acute schizophrenics, although here also a combination of ICZ and INZ was the most effective, and ICZ was the most effective of any drug used alone.

ISOCARBOXAZID VERSUS ELECTROTHERAPY

For the sanitarium psychiatrist who has had to suffer through comments that he is "shockhappy" and that all his patients get

the same treatment, the antidepressants have been a great help. The marked decrease in necessary hospitalization and ECT produces a drastic economic reduction for both the sanitarium and its psychiatrist. It is to the credit of the profession that antidepressant usage has spread so rapidly.

Eighty-six percent of the ICZ patients in this series could maintain their improvement with careful reduction of dosage, while none of the patients showed even a mild relapse with a decline from the dosage level which produced their original improvement. This is in tremendous contrast to the 30% of patients on electrotherapy who relapse while treatment is still continuing. From over 200 comparisons, it appears that ICZ can totally replace "raw AC shock" treatments since the confusion produced by the latter limits the rate at which they can be given.

Lehman(14) feels that ECT is the treatment of choice for the suicidal depressions since he thinks it is faster and more predictable than drugs. This is difficult to understand since ICZ often produces improvement in 3 days, is *more predictable* and controllable, and shows no third-week or post-treatment relapses. The freedom from relapses is partially due to the fact that the patient can temporarily remain on a maintenance dose at home. The rapidity of effect results from ICZ's ability to cross the blood-brain barrier; the benzene ring is apparently the factor responsible for this permeability. The addition of INZ to ICZ accelerates

TABLE 2
ACUTE SCHIZOPHRENICS

Agent	No. of Patients	Marked	Per cent Rehabilitated Moderate	Total
Isocarboxazid	51	53	27	80
Phenelzine	46	48	24	72
Iproniazid	43	40	26	66
Imipramine	27	30	19	49
Nialamide	31	32	23	55
Phenylicyclopropylamine	17	35	25	60
Deanol	37	0	49	49
Benactyzine-meprobamate	59	0	41	41
Isocarboxazid & Iproniazid	21	57	29	86
Isocarboxazid placebos	16	13	25	38
ECT (Standard AG)	168	84	5	89

recovery to where it equals the speed of any type of ECT but without memory loss.

Although results in the approximately 1,800 patient illnesses show ICZ to be the strongest antidepressant, equaling or exceeding "raw AC" ECT, the overall figures are not quite as dramatic as case histories.

A case in point is that of a 67-year-old widow with a 20-year history of moderately severe depressions, the total duration of which filled half of the 20 years. The patient had had every conceivable form of treatment throughout that period, but the results were so bad that her family noticed that improvement occurred just as rapidly without any care—within 3 to 6 months—as with it. Three years ago, 3 months of improvement followed 3 months of hospitalization and 37 ECT's. One year ago she improved within 2 weeks on INZ, but slowly relapsed following disabling back injury. The patient improved possibly 30% in 3 weeks on phenylethylhydrazine,¹⁵ but subsequent dosage increases did not bring about greater improvement. On 75 mg. of INZ daily, she again improved slightly. With ICZ, the patient exceeded even her previous improvement with INZ to the point where the past 7 months have been her most active period in the last 5 years.

LACK OF TOXICITY AND SIDE EFFECTS

As stated above, alkaline-phosphatase determinations were done for every patient every 2 weeks. In all but 3, these ranged between 1.8 and 3.7. Two patients showed elevations of 4.3; the drug was continued in both since they were entirely asymptomatic. Within 2 weeks the tests returned to normal without incident.

The third patient developed a minimal infectious-type jaundice 4 weeks after starting chlorpromazine 300 mg. a day, and 5 days after being transferred from INZ and phenylethylhydrazine to ICZ 30 mg. daily, he was continued on the latter at his and his family's insistence because of the extreme severity of the depression which had just begun to show improvement. He developed what appeared to be minimal scleral icterus on 25 mg. chlorpromazine t.i.d. for 3 weeks, and 30 mg. of ICZ for 7 days. The patient's symptoms were minimal in comparison with those of the 6 chlorpromazine jaundices the author has

treated, while the risk of suicide or elopement had been extreme for several months. He showed minimal scleral icterus and gray stools for 6 days, with an abrupt total disappearance of both on the seventh day.

This case was the only instance of jaundice in 206 patients given chlorpromazine delayed-action capsules; in the previous 2 years, 6 cases occurred in 288 patients receiving chlorpromazine tablets.

The occurrence of this mild jaundice 4 weeks after initiation of chlorpromazine, and its improvement while ICZ was continued, seemed to justify the diagnosis of an abortive infectious or chlorpromazine hepatitis. Although there are certainly other explanations for what occurred, and one case does not warrant general conclusions, the fact that a definite acute jaundice improved while the patient was taking 20 mg. of ICZ daily is reassuring as to the drug's effect on existing disturbed liver function. In none of the 195 patients was the drug ever discontinued because of side effects.

Many physicians may not share the author's enthusiasm for combined ataractic-antidepressant therapy. However, in considering the compatibilities and possible "synergistic toxicities" of a new drug like ICZ it is informative and reassuring that in 195 patients it was without serious side effects, even though throughout it was used with at least one phenothiazine, and occasionally with another antidepressant. Drugs with which ICZ was effectively used include chlorpromazine, promazine,¹⁶ prochlorperazine, perphenazine,¹⁷ mepazine, trifluoperazine,¹⁸ triflupromazine,¹⁹ iproniazid, phenelzine, phenylcyclopropylamine, imipramine, amphetamine, methamphetamine, mephentermine,²⁰ methylphenidate.²¹

Mild hypotension seemed somewhat less of a problem than it had been with phenylethylhydrazine, although it had not been frequent or severe with the latter.

¹⁶ Sparine, Wyeth Laboratories, Philadelphia, Pa.

¹⁷ Trilafon, Schering Corporation, Bloomfield, N. J.

¹⁸ Stelazine, Smith Kline & French Laboratories, Philadelphia, Pa.

¹⁹ Vesprin, E. R. Squibb & Sons, New York, N. Y.

²⁰ Wyamine, Wyeth Laboratories, Philadelphia, Pa.

²¹ Ritalin, Ciba Pharmaceutical Products, Inc., Summit, N. J.

¹⁵ Nardil (phenelzine), Warner-Chilcott Laboratories, Morris Plains, N. J.

CONCLUSIONS

Isocarboxazid, an iproniazid analog, showed better results in the treatment of 195 patients with depressive and acute schizophrenic reactions than were seen in varying numbers of patients on 7 other antidepressants, including 223 treated with iproniazid. With a median improvement time of 8 days, isocarboxazid alone equals or exceeds ECT in speed and effectiveness, and shows no major side effects.

Isocarboxazid appears to have the strongest "activation" effect of any amine oxidase inhibitor, is easily managed in maintenance usage, and can be combined with other antidepressants or tranquilizers, at least one of the latter having been used with it in every one of the 195 patients in this series. It is quite effective in both acute schizophrenic and depressed patients, and the fact that these diagnoses constitute 83% of private psychiatric hospital admissions indicates the potential wide range of application of isocarboxazid.

The mood-elevating effect of isocarboxazid correlates with the rise of norepinephrine, but not with the earlier serotonin increase. The frequently seen early sedative effect of isocarboxazid, however, does accompany the rise in serotonin. This "double-action" of isocarboxazid is one of the basic reasons for the sharp difference in its clinical effects from those of amphetamine.

Pharmacologically, "balanced therapy" is simply the outside reinforcement of the isocarboxazid tranquilization in agitated and disturbed patients. Although a good "balance" does not produce hyperactivation, under conditions of unusual stress the patient can be deliberately carried "higher." In the special case of extremely disturbed psychotics only partially controllable with high phenothiazine dosages, isocarboxazid can be used to provide a reinforcing reserpine-type tranquilization.

Concern about possible hepatotoxicity seems unwarranted, not only because there were no significant liver function changes during this study, but because a suicidal

risk with a mild chlorpromazine or endemic hepatitis showed clinical improvement and resolution of his jaundice while on isocarboxazid. The drug produces no obvious change in the ECT threshold and shows little clinical potentiation of alcohol but minimizes the "morning after." It "potentiates" phenothiazines sufficiently to improve the "tranquilization" of extremely disturbed patients.

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CRIMINAL GENESIS AND THE DEGREES OF RESPONSIBILITY IN EPILEPSIES¹

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My interest was awakened in violence associated with automatism, and came close to ending abruptly at the very moment it was aroused, by a vivid personal experience in my office. I was alone with a new patient who complained of convulsive attacks with loss of consciousness, occurring every month or two. This had gone on from early childhood and no medication so far had reduced the frequency of the attacks. He was a baggage clerk in a railroad station, young and frail-looking, with a timid personality.

I was just finishing with his history and examination and was writing a prescription for an anticonvulsant drug when I suddenly became aware that he had risen from his chair in a rigid, mechanical manner and was approaching me with out-stretched hands. With an iron grip he attempted to choke me. He had a fixed, distorted facial expression and a vacuous look in his eyes. It required a rather desperate struggle to break his hold on my neck. In a few seconds he fell to the floor in a grand mal attack, with fixed pupils and foaming mouth. When the tonic and clonic states passed, he gradually regained consciousness, looking around in a daze. Later, when he was informed of what had taken place, he was completely amnesic. I learned later from his family that at times, in the incipient phase of an approaching attack, he had shown unprovoked aggressive behavior.

After this unforgettable experience, and repeated observation of cases in which the outcome was less fortunate, it has not been difficult for me to understand how many otherwise inexplicable crimes of violence can be explained as automatism associated with what we generically call epilepsy. Epilepsy is so variable in its manifestations and may occur in forms so obscure or evanescent that a sufferer of this syndrome can carry out a furious attack without conscious intention and without subsequent recollec-

tion of the event. It would seem that in criminal trials, both medicine and jurisprudence have given insufficient attention to this circumstance and that appraisal of the pathological phenomena involved, and vigilance for their detection, could well be stimulated.

Epilepsy, of course, is one of the persistent enigmas of medicine. Its wide-ranging symptomatology, which is a manifestation rather than an entity of disease, continues to engage the labors of investigation. In spite of advancing knowledge of the epileptic phenomena and brain pathology, as well as psychochemical action in the brain, the accumulated findings tend to consist largely of description rather than definition. After some 24 centuries of observation and study of what the ancients called "the sacred disease" and Hippocrates recorded as "falling sickness," conclusive elucidation of this pathology lingers on as an item on the agenda of biological science for future disposal.

No one knows how many epileptics there are. The number of known convulsive cases in the United States is said to be close to 1,500,000 and the number of chronic cases requiring institutional care 50,000. Some investigators believe that one person in every 200 is a potential epileptic. Nearly every practitioner is aware of sizable numbers of persons who are afflicted in some degree with epileptic symptoms but who neglect or refuse to obtain treatment. How many others have a latent or dormant tendency to some of the many forms of epilepsy can only be imagined.

In over-all effect, the management of the affliction is a matter of palliation and control rather than progressive treatment. Great numbers of relatively moderate sufferers are enabled, by medication and counsel, to engage in normal pursuits. They remain in employment or other forms of endeavor without major difficulty and lead virtually normal lives. They are licensed to drive automobiles under proper certification of med-

¹ Read at the 116th annual meeting of The American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

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ical control. *The problem and public dilemma concerns those others who do not even know themselves that they are potential epileptics or who, aware of the difficulty, choose to do nothing about it.*

The oft-quoted dictum of Oliver Wendell Holmes remains a challenge to medical ingenuity. The physician and poet said just a hundred years ago: "If I wished to show a student the difficulty of getting at the truth from medical experience, I would give him the history of epilepsy to read." He was aware that epileptic automatisms were clearly recognized by 16th and 17th-century physicians. In our day, as in his, the traditional evasive tenet that the affliction is a divine visitation beyond human remedy no longer impedes scientific endeavor. Medical and biological investigators have made important strides toward understanding and countering the liability to convulsive seizures, but that there is still a long way to go is evidenced by our frequent puzzlement over the sudden and unforeseen eruption of violent automatism.

In reading time-steeped medical literature, one is often prompted to ask whether we have given sufficient acknowledgement and attention to those pioneers who proclaimed vivid insights on many of the problems that still perplex us. For example, Isaac Ray wrote in 1860:

The dementia which is the form of mental derangement to which epileptics are most liable after the fit is characterized by intellectual stupor and moral depression, in which, however, they have sufficient energy, under some circumstances, to commit acts of violence, of which they retain only an imperfect recollection after they recover.

The insufficiently appreciated English physician Henry Maudsley, writing more than 80 years ago, made this observation:

Certainly the most desperate instances of homicidal impulse are met with in connection with epilepsy. The attack of homicidal mania may take the place of the ordinary epileptic convulsions, being truly a masked epilepsy. The diseased action has been transferred from one nervous center to another, and instead of a convulsion of muscles the patient is seized with a convulsion of ideas.

Maudsley also cautioned:

It is important to bear in mind that the existence of epilepsy may be overlooked for some time in a person even by medical men, and this is perhaps more likely to be the case when there is a mental alienation which absorbs the attention. Attacks of epileptic vertigo are sometimes so slight that they are thought to be merely transient attacks of giddiness or faintness; and it is notorious that patients will often seek advice on account of some ailment which they attribute to the stomach or the liver, the real nature of their malady being elicited only by accident.

Maudsley commented that such cases often "occupy the borderland between crime and insanity." He spoke also of what he called the low physical and mental characteristics of criminals.

Lombroso emphasized the relationship between epilepsy and the criminal nature. However, in his attempt to attribute abnormal skull formation as etiology of both epilepsy and criminality, he blurred the true significance of his researches.

After this long history of what might almost be called intermittent bursts of interest in the problem of automatism, should we not feel somewhat embarrassed by the fact that our knowledge of the pathology even today remains nebulous and amorphous, and even more so by the fact that so many persons susceptible to the disorder remain unrecognized or untreated until a grievous outburst has advertised their affliction?

Wilder Penfield has observed that:

the automatic individual has lost the means of comparing the present situation with previously established concepts. In this confusion, this failure of understanding, his loss of ability to record his present perceptions is complete. This seems to be the essential defect. . . . Automatism is the temporary ictal, or postictal, state of a patient, who has not lost motor control but lost, to some degree, his understanding and has complete loss of capacity to make durable memory records.

Sakel, out of his experience with insulin shock therapy in the treatment of schizophrenia, made many penetrating observations on the convulsive mechanism. He con-

ceived of the convulsion as a defense process seated in the vegetative nervous system, a crisis invoked in an automatic way to cope with any threat that may occur to the body. He defined it as a normal response of the nerve tissue to excessive irritation, acting to restore a disturbed equilibrium to normal on the principle of homeostasis. He found, incidentally, that emotional factors play a part in aggravating the number and seriousness of the seizures.

Epilepsy has been variously attributed to congenital defects, prenatal injury, trauma, febrile thrombosis, neoplasms, degeneration and arteriosclerosis. The seizure has been described as a literal physiological brainstorm with biochemical, endocrinological and genetic aspects, involving the mechanics of psychological processes. The fact that only some patients with head or brain injury develop convulsions has supported the assumption of an hereditary predisposition.

Practitioners and clinicians have long recognized a fairly standard trend of personality patterns in epileptics in general. These are characterized by emotional immaturity, extreme conceit, hypersensitivity and restricted interests. MacCurdy has described the typical epileptic as being considerate without being kind, religious without zeal and inclined to work for praise but not for love. It is a pattern that, together with emotional instability, volatility and a likelihood of irresponsibility in crisis, could be expected to react violently in the event of stress.

The existence of a considerable number of persons who are definitely epileptic but evade treatment is illustrated by the case of a young man who acknowledged frequent blackouts. The scion of a well-to-do family, he was well supplied with financial means to indulge his oscillating moods. While driving his car he would periodically pull up at the side of the road when he felt one of his minor seizures coming on, and would proceed when it had passed. He wrecked a number of expensive cars in accidents attributable to this instability. Referred for therapy after one of his escapades, he beligerently refused to cooperate in treatment, considering this acknowledgement of his affliction an affront to his ego. Though warned

of the seriousness of his condition and assured that it could be controlled, he flouted his family's efforts to help him. Eventually, he became involved in a financial speculation explainable only by his irresponsible personality pattern and suffered legal consequences for it.

A case of what may be termed preventable murder involved another young man whose plainly pathological condition was aggravated by excessive drinking. He had been discharged from the army as epileptic and this finding had been confirmed in several psychiatric clinics. One evening he sat in a bar drinking and there lapsed into an amnesic interval. When his awareness returned he found himself in his car, parked in a lovers' lane. Beside him was the body of a girl with whom he had been friendly and beside her a blood-stained wrench with which she had been battered to death. In spite of the recorded evidence of his epileptic condition and the obvious deduction that alcohol had provoked his furor state, he was convicted of first-degree murder because no testimony could be adduced that he had been in a state of seizure when the murder was committed.

In another case a boy of 13, while playing with a girl of 7, tried to experiment sexually with her. When she screamed he beat her on the head with a rock, killing her. His family assented to a plea of guilty to second-degree murder and, in spite of his age and medical testimony that he was indisputably epileptic, he was sentenced to prison for 30 years to life. His history showed chronic enuresis and episodes of morbid preoccupation with killing animals and insects, as well as several instances of fugues when he was found as far distant as Florida and California without recollection of his wanderings. In prison he suffered two to three grand mal attacks weekly. It is now more than 10 years since he was sentenced and at last report the prison physician still found it necessary to keep him under anti-convulsant medication.

My experience with organically determined violence in young people was highlighted in the case of a boy of 14 who murdered with exceptional brutality. precociously husky and muscular, he was visiting an aunt, 23 years old, the mother of two

children and pregnant, to watch television. When the young woman complained of feeling unwell and asked the boy to leave, he was overcome by a "sudden urge" as he rose to go. He struck her in the face and when she fell kicked her about the face and head. He struck her again with a soda bottle, brought a metal spray gun from the next room and struck her with that. He then beat her with a lamp, obtained a large knife from the kitchen and stabbed her in the neck. Still in furor, he wound a lamp cord around her neck and was dragging her to the kitchen, intent on stringing her body on a water pipe, when a knock on the door alarmed him and he fled through a window. This boy had a history of two serious head injuries and of blackouts attributable to them. His only previous offense had been car thefts, carried out in frivolous disregard of the likelihood of detection. He was clinically found to be epileptic as a consequence of brain injury. On at least one occasion while he was in a custodial institution he had an unprovoked outburst of characteristic furor in which he struck a wall violently with his fists.

Another case involved a young man accused of killing his mother. There had been an argument between them about the painting of a room. The son left the house and when he returned his mother was on a step-ladder proceeding with the painting job. The argument was resumed and the young man claimed to have no clear recollection of what followed. But it appeared that the mother fell or was pushed from the ladder and was killed when her head struck a marble abutment. There were significant sequels. I was asked to examine the young man and to elude his recollection of the obscure episode. I injected a few grains of sodium amytal. As soon as the drug took effect he became violent and assaultive and was prevented from attacking me only by the presence of others who were able to restrain him. On another occasion while in custody he vented a sudden unprovoked burst of rage by striking a wall with such force that it left a hole in the plaster. Later

he was committed to a state hospital and in a similar outburst there he struck a beam so violently that the lumber was displaced. Thus we had several demonstrations of the spontaneity with which such a person, subject to sudden outbursts, can erupt in violently aggressive episodes without warning or observable provocation.

Reflecting upon such cases as these, the frequency with which they occur and the varying medico-legal attitudes assumed in assessing them, one feels that it is time that we agree upon ways of evaluating them from the standpoint of prevention as well as juridical disposition. We have had enough experience in this field to determine the necessary precautions and procedures. It is not a problem for psychiatry alone; general practitioners and pediatricians need to be kept alert to the dangers that can accrue from a great variety of pathogenesis: prenatal trauma, feverish childhood diseases, injuries, encephalitis and all the other possibilities of brain deficiency or damage which might lead to convulsive syndrome and severe antisocial behavior. Where abnormal symptoms occur in behavior or in pathology, we would do well to exhaust every resource of diagnosis and therapy to forestall the serious consequences of liability to convulsive disorder. EEG examination should be routine where any such tendency is indicated, and even negative findings should not be regarded as conclusive.

The medico-legal problem presented in epilepsy is one that concerns primarily the patient susceptibility to automatism in seizure, or the equivalent of seizure. Even when it can be shown that the perpetrator of a violent crime was acting without conscious volition, a court is unlikely to agree that the person is not legally responsible. Under the McNaghten Rule such defendants are not definably insane. It is a dilemma in which all of medical science must feel constrained to offer to the legal authorities every possible lead in the evolution of a workable, equitable formula.

REINTEGRATION OF PSYCHOANALYSIS INTO TEACHING¹

GEORGE C. HAM, M.D.²

Psychoanalysis as a theory, as a method of investigation, and as a technique of treatment has in a few short years been strikingly, if unevenly, integrated into medical education, research and practice. This represents a radical change from two decades ago. During these 20 years the chairmanship of several departments of psychiatry have been awarded to men who were fully trained psychoanalysts; many others to men well acquainted with the principles and concepts of psychoanalysis. The majority of other medical school departments of psychiatry have included as fundamental principles many of the discoveries and basic concepts of psychoanalysis. Curriculum time for the undergraduate medical student has been dramatically increased to admit the introduction of these principles as basic factors in human development and human behavior. Knowledge of the development, mechanisms and disturbances of the psyche have come to be considered by many medical educators as essential to medical diagnosis and treatment as the same basic understandings of the soma have been for years.

Graduate training of specialists in psychiatry has grown markedly in numbers, quality of training programs, and in support by state and federal agencies. Along with the support of specialty training in psychiatry has been the parallel strengthening of training in psychiatric nursing, clinical psychology, psychiatric social work, and more recently, of social scientists in the field of mental health. These disciplines together have brought a new excitement in the revealed, hopeful results from understanding inter and intra personal processes. The development of remedial treatment that is stemming from these new understandings has led to major growth in both basic and applied research in the field of mental health by many medical disciplines. It is

clearly evident that these changes, both in the undergraduate medical school curricula and in the growth of graduate training programs, has resulted from the new beacon of hope that has derived from the application of extended understanding of human health and illness in breadth and depth, and from the real and demonstrable improvement in techniques of treatment and of prognosis. New areas of investigative opportunity have developed as a consequence.

Many of these changes can be attributed to the introduction of the basic concepts and techniques of psychoanalysis. This is true, even if the word psychoanalysis, the source of many of the principles, is obscured under the rubric dynamic psychiatry.

Psychoanalysis then, as compared with 20 years ago, is in a highly "prosperous" position in academic medicine and in residency training generally. The late Allen Gregg, speaking in 1952, reported that a former professor of his, Thomas Nixon Carver, a sociologist, in the year 1910, described the accomplishments of man in terms of adversity. Dr. Carver outlined the major advances that had been made in controlling two major adversities—epidemics and famine. At this point, Professor Carver took off his glasses for a moment, looked out over the class, and added this prescient observation:

"I suspect that some of you young gentlemen may witness the beginnings of a new kind of struggle for survival. The question for you may not be 'Who will survive adversity?' but 'Who will survive prosperity?' And gentlemen, to guide it in the struggle to survive prosperity, the human race has yet but little experience, common knowledge, or tradition."

Dr. Gregg then went on to state,

that those who are making the history of psychoanalysis—and I here refer to it in terms of its relationship to teaching in medical schools or in residency training programs—could sensibly reflect upon the problems of surviving prosperity. It is all but needless to say that I do not have in mind the charges or the income

¹ Read at the 116th annual meeting of The American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

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of psychoanalysts when I speak of prosperity. The issue transcends that petty consideration. A greater task confronts you. Psychoanalysis has survived the adversities of opposition, obloquy, disdain, disgust, hatred, and fear. It has been evaded by academic psychiatrists, condemned by universities, condemned by churches, ignored by hospitals. Ridicule, persecution and ostracism, if such winnowing may appear to deserve the name of adversity, psychoanalysis has survived. But now it faces the task of surviving prosperity—prosperity in the form of admission to academic status, of being tolerated, of being accepted, of having attention and deference, and most important of all, of being in demand. This surviving prosperity being a relatively new task, you will have but little experience, tradition or knowledge to steer by.

The fact is that in relationship to academic teaching and specialty training, psychoanalysis has many of the problems of the nouveau riche. We must face these new responsibilities, the new potentialities for contribution, the inherent criticism, misunderstanding, and misinterpretations that are part and parcel of any change, and with patience and objectivity, maximize the opportunities that are, and will become, available for continuing growth and synthesis with medicine in general and health and illness in a broad perspective, in particular.

The title of this symposium is "Reintegration of Psychoanalysis." I am addressing myself to "Reintegration into Teaching." If we use the psychoanalytic model, it is imperative to understand the present, which I have just outlined, in terms of the genetic and determinative past, in order to understand the mechanisms, work through the defenses, and maximize the opportunities for ego growth for the future.

Out of the genius of Freud, a physician, came the discovery of a truth about man that was so frightening, except to a few, that he was cast out of academic medicine into the relative obscurity of defending and developing his discoveries with the aid of a small body of courageous exiles. His discovery, demonstrating that man is not complete master of himself, like the findings of Copernicus, that the earth was not the center of the universe, was not accepted into general knowledge for a number of years. The requirement that Freud and his fol-

lowers be self-supporting as practicing physicians, as contrasted to what might have taken place had they been in academic posts, influenced the development of psychoanalysis as a method of treatment, and for a number of years directed emphasis on the training of practitioners. The development of the Berlin Institute and the subsequent development of excellent psychoanalytic institutes throughout the country is evidence of the courage of the people who developed and maintained them. The tremendous post-war demand for training by psychiatrists in the psychoanalytic institutes was and is evidence of the demonstrated value of its concepts and principles. The history and the function of these institutes is well known. Although in the United States psychoanalytic institutes were dedicated almost entirely to the training of psychiatric physicians for psychoanalytic practice, most remained outside the general body of medicine, as represented by medical schools and residency training programs. The staffs of the institutes were largely private practitioners, as was Freud, and part-time teachers. Gradually, however, some institutes became involved in research related to general medical problems in the area of "psychosomatic medicine" and in relation to pediatrics in the area of child psychiatry and child analysis, as well as with psychologists, social scientists, social workers, and others. Although these investigative problems impinged with increasing emphasis on areas within general medicine, it was only in recent years that some members of the faculties of psychoanalytic institutes began, on part-time basis, to participate in teaching within medical schools and in residency training. At the beginning of this discussion, I indicated the changes that have occurred in the most recent period toward acceleration of academic acceptance of psychoanalysts and of psychoanalytic concepts and theory. In this sense, Freud has returned to academic medicine.

Although I am sure Freud would have rejoiced at this new development, he would have realized immediately that the substantive content, pedagogical techniques as well as the goals of psychoanalytic institutes could not be transferred in unaltered form and satisfy the new needs and problems of

medical students and residents. He would have realized that just as a few banded together with him to form the nucleus from which came the tremendous development of psychoanalytic institutes and psychoanalytic training as it is today, there would be the same need for mutual support of the early adventurers into this new area of responsibility and application. Indeed, 8 years ago, a group of us who as psychoanalysts had accepted the chairmanship of departments of psychiatry in medical schools, did develop a mutually supporting organization. Interestingly enough, these 7 men facetiously named their group the Beachhead Club appropriate for an Army landing on a hostile shore. It is significant to note that after several years of mutually supportive meetings, the name was changed, indicating increased security, to one more appropriate for pioneers invading and traversing a new land: the Stagecoach Club. This name is still active and pertinent.

What are the problems, challenges and opportunities relating to the introduction of psychoanalysis into medical education and into residency training programs?

At the outset, let us consider certain general factors regarding the social and conceptual realities of medicine into which psychoanalysts seek reintegration. On the one hand, medical progress and academic medicine for the past 60 years have been largely influenced by the development of the physical and chemical sciences. These developments have permitted the amazing particularization and atomization of the structure of the body and of its component parts. These sciences have grown with amazing lushness as branches, twigs, and leaves of a luxuriant tree from a sturdy trunk which is in the tradition of the structural concept of the pathologist, Virchow. The tremendous success in the eradication of many illnesses of this relatively simple concept of structural change as the cause of symptoms, persists as a mighty deterrent to the transactional or multifactorial concept of human adaptation and illness that has derived from psychoanalytic thinking. It persists in the open expression of expectation that the so called mental illnesses will be "cured" by the simple expedient of discovering the disturbed enzyme system and the administration of

the appropriate chemical to alter this state. The traditional medical curriculum under this influence has been divided into two years which are dedicated to the "basic sciences" and two years to the clinical sciences. The basic science years require the detailed study of parts and sections of the body in terms of their normal or altered anatomy, physiology, biochemistry, *etc.* This attitude of understanding illness as resulting from disturbed anatomy or function of organs or organ systems is carried over into the clinical years, where diagnosis and treatment tend to be focused upon searching for evidence of disordered organ function in the physiological or biochemical sense by highly developed laboratory procedures and the administration of appropriate substances or regimes directed at the disturbed organ system.

A change in values is well under way. However, it must be remembered that new concepts and attitudes, many of which have been derived from psychoanalysis, which are broadening our concept of health and illness were not part of the formative student years of the majority of the leading physicians in academic medicine in all other branches of clinical sciences. This is even more true in the basic sciences of medicine where many of those who set the intellectual model are Ph.D.s highly skilled in their particular field, to whom the concept of developmental adaptive holism is in direct contradiction to the concept of finer particularization of structure. Secondly, these scientists, including the clinical specialists, rely on quantitative measurement of biochemical or biophysical processes and have developed ingenious machines to make this possible. In contrast, the proponent of the scientific application of psychoanalytic understanding to human health and illness must rely largely on prediction, a measuring device open to criticism because of the subjective values inherent in the method in the measurer and because of the time required in the process of measurement of predictability.

In view of this sociological dissonance between the structural and dynamic adaptive concepts, it may be useful to pause a moment to examine some of the forces that led to the exciting but uneasy marriage that has occurred. It is largely since 1945, that re-

turning veterans, impressed with the success of psychoanalytic principles in treating war neuroses, created a demand in medical teaching for the inclusion of more than the unsatisfying descriptive and organic psychiatry of the past. This movement was aided by the appalling discovery of the high percentage of incapacitating psychoneuroses, psychosomatic disturbances, psychoses, and behavior problems in the induction stations throughout America incident to mobilizing for the great conflict. These pressures resulted in the rapid acceleration of the introduction of psychoanalysts into medical schools as chairmen of departments or as members of faculties and the introduction of derived concepts of psychodynamics into medical education. The consequence was the introduction of increased time to departments of psychiatry including the opportunity to introduce in the pre-clinical or basic science years concepts which were direct progeny of psychoanalytic thinking. These were introduced under various names such as human development, psychodynamics and the life cycle, human ecology, introduction to medical psychology, introduction to psychiatry, *etc.* In many schools, such courses are conducted in collaboration with other clinical departments and some basic science departments; in others, by departments of psychiatry alone. Many of these concepts were strange and disturbing both to students and to existing faculty of other departments. These new courses demanded inclusion and examination of many more factors than had previously been required in the armamentarium of a competent physician. The relative absence of the type of experimental evidence and quantitative data used in other sciences to validate theories and hypotheses required students and non-analytic faculty to accept "on faith" many of the principles taught in these new courses, including the demand that a present illness be looked on as a maladaptive state which could only be understood in terms of the entire history of the particular human being involved; that what appeared to be illness in the usual sense could be viewed as the only adaptive opportunity available to this person at this time commensurate with life and in this sense represents a successful adaptation; still further

emphasis was placed on the present being a continuation of the past; the demand for knowledge of the day-by-day development of each individual from the genes through the gestational period and the entire life cycle; the fact of instinctual drives; of unconscious determinism; of the reality of psychosomatic and somatopsychic relationships; of the fact of transference and countertransference as manifested in the doctor-patient and other relationships; of the non-specific effect of drugs; of the production of structural change secondary to intrapsychic conflict as the result of environmental maladaptive states—a complete reversal of the Virchow position; the realization that the so-called mental illnesses merely represent an exaggeration of everyday mechanisms of human behavior and adaptation; the facts of determinism and of teleology and of the dramatic results of words and human attitudes in the form of psychotherapy, upon psychological and biological states and on integrated behavior; of the realities of sociological and anthropological influences as productions of man, and therefore amenable to man's correction and alteration—all of these and more required a perspective and a synthesis into the existing body of medical knowledge that both excited and threatened faculty and students alike. The natural result of this state of affairs in human beings is insecurity. Insecurity can stimulate the development of emotionally colored defensive positions. A tendency develops within the atomistic sciences to become more atomistic and to demand "scientific" evidence from the adaptive behavioral group using their familiar methods of quantitative measurement. Likewise, the prosperous newcomer, with his shiny new concepts, tends defensively to strengthen his different dialect, and indeed, a different dialectic. A tendency develops for the two groups to place themselves on opposite sides of that blinding beacon, truth. One can at times come to despair of mutual recognition by observers in both camps. They seem unable to see beyond the great light and into the faces of the other observers who see the light too. A gracelessness develops in each discipline in the study of man. Each becomes too insecure to give, even, to give thanks.

In my opinion, this represents the greatest hazard to the reintegration of psychoanalytic principles into the body of medicine. It requires the application derived from our psychoanalytic knowledge of the maximum patience, of maturity, of working through. It requires the grace of openness, the grace of acceptance of real criticism, honest attempts to bridge the gap of scientific confusion and distrust, and the alleviation of the defensive tower of Babel.

These goals of a mutually acceptable synthesis, although fraught with many hurdles, can be obtained. A synthesis which offers a frame of reference and an opportunity for collaborative teaching and research for all medical disciplines has been beautifully developed and described by George L. Engel, in the book, *Mid Century Psychiatry*.³ Dr. Engel's paper entitled, "Homeostasis, Behavioral Adjustment and The Concept of Health and Disease," clearly outlines 4 components which contribute to the clinical picture of disease, which I prefer to spell dys-ease, painful-ease. These 4 components include factors derived from the sciences of phylogenesis, biological adaptation and instinctual drives. They are :

1. The attempts at satisfaction of instinctual needs which have been interfered with.
2. The inner perception of a disturbed equilibrium or an unsatisfied need involving the concept of a danger signal.
3. The various adaptive devices old and new, chemical, physiological, psychological and social, which come into play to cope with the stresses, primary and secondary, to restore equilibrium and to assure satisfaction of instinctual needs.
4. The actual structural or functional damage which may result from the stress itself and from the attempts at adaptation which are inappropriate or unsuccessful.

With this background, allowing a unitary concept of health and disease, the task of medical science becomes clarified. All physicians, including psychiatrists and psychoanalysts, in relation to medical education and research, must familiarize themselves with and learn more about man's phylogenesis, both organic and social, and man's ontogenesis, biological, psychological and social. He must understand man's basic needs and his means of adaptation in a physical, organic and social environment. He must study the failures of adjustment and define more

clearly their determinants and what constitutes meaningful stress. And finally, he must study and devise new and more effective means of aiding the adaptive efforts of the sick patient.

With these words, Engel has summarized the task of psychoanalysts as they bring their science to academic medicine. Likewise, the benefits to the psychoanalyst-teacher in medicine of broadening his perspective to include the understanding of the factors mentioned above will permit the fuller fruition of experimental knowledge concerning man's development and behavior and in consequence, a broadened application of the principles developed by Freud and his followers.

All that has been discussed above has been focused largely on the task of general medical education. This includes the medical student and the non-psychiatric intern and resident, as well as non-psychiatric faculty. What of the resident in training in psychiatry and of psychoanalytic training in its fullest sense of residents and faculty members? I draw your attention to an excellent discussion by Maurice Levine in a book entitled, *Twenty Years of Psychoanalysis*.⁴ The title of his paper is, "The Impact of Psychoanalysis on Training in Psychiatry." In his presentation and the discussions by Henry Brosin and Roy Grinker each essayist indicates the tremendous impact that psychoanalytic concepts have had on training of specialists in psychiatry. As Levine puts it, "An essentially static and descriptive discipline has become dynamic and vital and energetic. Psychoanalysis has played an outstanding part in the transformation, but it has not been the sole agent of the change." The major concern for the balance of Dr. Levine's paper concerns the matter of the training of the psychiatric resident for maximal integration of psychoanalytic insights which are pertinent to dealing with the broad gamut of illness faced by the general psychiatrist. He discusses in detail the essential components and differences of the psychoanalytic psychiatrist from the fully trained analyst, including the subject of wild analysis, its dangers and the need for derivatives of psychoanalysis that can be applied in a broad range of illness.

No attempt will be made here to discuss

³ Edited by Roy R. Grinker. Published by Charles Thomas, 1953.

⁴ Published by W. W. Norton & Co., 1953.

the integration of formal and complete psychoanalytic training into the university framework. Examples of this development are well known and new patterns are continuously developing throughout the country.

Many of you may be wondering what pertinence the material I have presented has in a section on psychotherapy, whose general topic is reintegration of psychoanalysis into psychiatry, with the specific title of, "Reintegration Into Teaching." It is my thesis that a scientific understanding and approach to treatment of patients through the personal contact of one person, the physician, with another person, the patient, is the province of all physicians. Thus, the underlying principles involved in the forces which make for improved adaptation of the ill person requires an understanding of the total. If we are to bring the benefits derived from our understanding of human development, human adaptation and human maladaptation as developed and understood by psychoanalysis to the masses of the people, it is essential that a synthesis of all of the factors described above and outlined by Engel become a familiar component of every physician's conceptual framework and

modus operandi. Obviously, every medical student or every non-analyst cannot be a psychoanalyst. However, every medical student and every non-psychiatrist and every non-analyst can have a grasp of the forces involved in human health and illness, which make it possible for him to understand, to tolerate and to maximize the use of the facts of transference and countertransference often described as the "tincture of physician" in a scientific manner. Thus, that which has been described as the essence of the true physician, and which has previously been described as an art becomes more scientific and more controllable. All of the above, the strivings toward means of introduction of psychoanalytic concepts into medical teaching, as well as into the teaching of psychiatrists, has as its goal the enriching of our understanding of the total operation of man. This is in the direction of creating what I like often to refer to as a science of the art of medicine. By this means, over time, can our understanding of the many factors involved in human health and illness be elucidated and can psychotherapy in its broadest sense become increasingly available as a standard aspect of medical care.

A GRADUATE SCHOOL FOR PSYCHIATRIC EDUCATION OF PHYSICIANS IN MENTAL HOSPITAL SERVICE¹

PAUL H. HOCH, M.D.,² AND SANDOR RADO, M.D., D.POL.SC.³

In 1958, after years of experimentation, the New York State Department of Mental Hygiene authorized the establishment of a new graduate school—The New York School of Psychiatry—as a pilot center for the psychiatric education of residents in a group of state mental institutions in the Metropolitan area. Chartered by the Board of Regents of the University of the State of New York this school operates under its own Board of Trustees, its own officers of administration, and an Advisory Committee, headed by the Commissioner of the Department of Mental Hygiene. The group of state institutions associated with the New York School of Psychiatry (Brooklyn, Central Islip, Creedmoor, Kings Park, Pilgrim State Hospitals; Willowbrook State School)⁴ have at present a total bed capacity of 36,000 and 126 positions for residents.

The School is quartered in Manhattan State Hospital (Ward's Island) in New York City. Teaching facilities include administrative offices, lecture, seminar, and conference rooms, a library and an outpatient clinic. It has a faculty of 20, a clinical faculty numbering 15, and some 20 visiting professors and guest lecturers. Its student body at the start of the academic year 1959-60 numbered 77.

A word of appreciation should be addressed to the Directors and administrative personnel of our associated hospitals. Their readiness for close collaboration was as

generous as their willingness to facilitate and expedite a teaching schedule that impinged on their own schedules for patient care.

From the point of view of the planners it proved to be less difficult to construct a new unit charged with a single task (to educate residents in a uniformly operated Mental Hospital System) than to add the same task to the multiple responsibilities of a large academic center.

To satisfy both scientific requirements and practical necessities,⁵ graduate psychiatric education was divided into 2 stages. The over-all plan, stage 2 of which is not yet fully operative, is shown in Table 1(2):

TABLE 1

THE 2 STAGES OF GRADUATE PSYCHIATRIC EDUCATION

1. *Basic Curriculum.* This embraces the entire field of psychiatry, requires 2 years and is combined with residency in a mental hospital. Followed by:

2. *Advanced Curricula.* Specialized training in the following areas:

1. Administrative Psychiatry (hospital and community); 2. Medical Psychotherapy, including (2a) Medical Psychoanalysis; 3. Psychiatry for the Aging; 4. Child Psychiatry; 5. Mental Deficiency; 6. Methods and Techniques of Research Psychiatry.

Areas 1, 2, 3, 4, and 5 require 1 year each; areas 2a and 6, 2 to 3 years each. Whichever area is selected, all advanced curricula are combined with work at a psychiatric institution.

Our first responsibility in the basic curriculum is to demonstrate to the student the fundamental significance of the scientific method. The student must learn how to think. In his clinical observation, he is taught to give full consideration to informa-

⁵ For background information see Whitehorn (1).

¹ Read at the 116th annual meeting of The American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

² Commissioner of Mental Hygiene, State of New York; Professor of Clinical Psychiatry, College of Physicians and Surgeons, Columbia University.

³ Dean, Professor of Psychiatry, The New York School of Psychiatry.

⁴ Arrangements for the graduate psychiatric education of residents are made by the Department of Mental Hygiene according to geographical location. Another group of state mental institutions is connected with the Department of Psychiatry of Columbia University, and a third group with the Department of Psychiatry of the State University Upstate Medical Center in Syracuse.

tion derived from the basic sciences. The days of crude clinical empiricism are gone. To become a competent clinician, grounding in the basic sciences is essential. Nor should the student indulge in the perpetuation of outworn and sterile dogmatic concepts. He is expected to develop and refine his own scientific judgment, upon which the scientific value of his future work depends. In order to bring basic science instruction closer to the student's clinical experience, whenever feasible, patients are used for the demonstration of theoretical principles and experimental findings. The outpatient service plus the patients in the associated hospitals assure the School access to an almost unlimited variety of psychiatric disorders.

The basic sciences of clinical psychiatry fall into two groups; one psychodynamic, and the other, physiological. The former uses chiefly the investigative methods of communicated introspection; the latter, the manifold investigative methods of inspection, culminating in measurement by yardstick and clock. To facilitate correlation of the emerging 2 conceptual schemes, both are presented within the same adaptational framework. Every effort is then made to confront the facts and theories of psychodynamics with the corresponding facts and theories of physiology, and vice versa. Only by such cross-interpretation can one hope to diminish the confusion arising from the fact that the physician is compelled to use 2 approaches to the understanding of the same human organism. Without psychodynamics basic research in psychiatry has no problems—and without physiology, no solutions(4).

Instruction in the physiological sciences centers upon genetics; structure and performance of the brain; neurochemistry. Instruction in adaptational psychodynamics (3) deals with the part played in behavior by the societal as well as organismic mechanisms of motivation and control.

In the attempt to present a balanced and integrated scientific picture of human behavior, the essential determinants of behavior are thus traced through the levels of molecule, cell, organ, organ-system, individual, family, wider social groups, mankind as a whole, to the emergent patterns of

cross-level integration.⁶ From healthy, or adaptive behavior, the curriculum proceeds to the impairments and failures of adaptation known as the psychiatric disorders. Instruction in clinical psychiatry includes courses on examination, pathology, diagnosis and therapy. There are also courses on applied psychiatry and general subjects including methodology.

To be prepared for psychodynamic work the student needs to be sensitized to motivational understanding by training in self-awareness. As Freud has demonstrated, behavior disorders are dominated by hidden motivation. The student cannot possibly uncover the patient's hidden motivation, unless he has first learned to understand his own hidden motivation. While individual preparation of each student psychiatrist—such as an up-to-date personal analysis(2)—is an obvious practical impossibility, classroom instruction in "psychodynamic sensitization"⁶ (carried out in conjunction with interviewing patients, discussing dramatic events and stories, *etc.*) meets the conditions of graduate education in the entire field of psychiatry. But it leaves one problem still unsolved: how to open up for the student (who has had no personal analysis) his own life experience as a psychiatric resource. Adolf Meyer's early experiment to have each student write and explore his autobiography failed to achieve this purpose.

Alongside the various phases of preparatory and theoretical instruction, demonstrations are given of interview techniques, psychological testing, and the techniques of the diverse treatment procedures. This phase of practical instruction is followed by weekly clinical conferences in which each student in turn interviews a patient in front of the class. The patients selected are under treatment either in the outpatient clinic or in the hospital. The purpose of these conferences is to explore the patient's entire pathology (physiological as well as psychodynamic) to determine diagnosis, prognosis, and the treatment method to be employed, and to evaluate the therapeutic results. The student is exposed to a prolonged and closely supervised practical experience, both with psychoneurotic patients in the out-

⁶ See Rado's statement(5).

patient clinic and with psychotic patients at the hospitals.

The psychiatrist is concerned with the disordered "psyche" as it expresses itself in behavior disorders. Hence, all psychiatric treatment procedure—pharmacological, hormonal, electroconvulsive and other—must be employed in an appropriate psychotherapeutic framework. In recognition of this fact, a special course is devoted to the subject of "Adaptational Theory of Treatment: psychotherapeutic motivations and psychotherapeutic techniques." At the outpatient clinic, the student's chief tasks are to conduct admission interviews and practice psychotherapy. However, we are now in the process of introducing combined treatment methods, which supplement psychotherapy with drugs tested at the research installations of the Department of Mental Hygiene.

The diagnostic and therapeutic work of the students at the outpatient clinic of the School is supervised by a faculty member who interviews every patient assigned. Furthermore, members of the teaching staff visit once weekly each associated hospital, supervising the therapeutic work of students with patients at their "home" hospital.

Although the unifying concept of the school's educational plan is adaptational psychodynamics, the students are exposed to other frames of reference as well. Fifteen lectures, given by visiting professors and

lecturers, present the original historic version of Freud's theories and the more recent psychodynamic formulations of all schools. The same is true of the different schools in the physiological sciences. Throughout the curriculum, reading seminars cover the extensive literature of psychiatry. In this way, the many avenues of psychiatric thought are opened to the student for his own appraisal and evaluation.

A summary of the basic curriculum is shown in Table 2(6).

A certificate is issued to the student after successful completion of the basic curriculum.

In 1959, three advanced curricula in the following specialized areas were opened up:

1. Administrative psychiatry (hospital and community);
2. Medical psychotherapy;
3. Psychiatry for the aging.

The advanced curricula, too, are given twice weekly, except the one in medical psychotherapy, which requires attendance at the outpatient clinic of the School 3 times weekly.⁷

As residents in the associated state mental hospitals, students receive living accommodations and an annual salary of from \$5,850 to \$6,530 per year. No tuition or other fees are charged for either the basic or advanced curricula or the survey course.

Finally, a few words about the admissions procedure. The prospective students file two applications—one for admission to the New York School of Psychiatry and another for appointment as residents in the associated state mental hospital of their choice. It is hoped that the associated hospitals will be able to fill the residencies with applicants who also meet the admission requirements of the School. The general plan of instruction shifts the emphasis from preparation for private practice to preparation for public service in a mental health institution. In this way the Department of Mental Hygiene hopes that the School will perform

TABLE 2

SUMMARY OF THE BASIC CURRICULUM

<i>Theoretical and Clinical Instruction</i>	
Basic Sciences	
13 courses	185 hours
Clinical Psychiatry	
15 courses	375 hours
Applied Psychiatry	
3 courses	17 hours
General Subjects	
9 courses	147 hours
<i>Supervised Work</i>	
At the School's Outpatient clinic ..	317 hours
At the Students' Home Hospital ..	152 hours
Total	1193 hours

In addition, the student has to fulfill the requirements of residency work at his home hospital.

⁷ In the near future 3 more advanced curricula will be added, one in child psychiatry, another in mental deficiency and a third in the methods and techniques of research psychiatry. In time it is hoped that the program in medical psychotherapy will be broadened to include a complete special course of training in medical psychoanalysis.

an all-important recruiting function for the State Mental Hospital Service. How many of our graduates will continue in State service remains to be seen. Outstanding graduates are given faculty appointments.

Recently, the scheme of basic and advanced curricula was supplemented by a survey course which requires one day a week throughout one academic year. It offers students a series of lectures and conferences in subjects fundamental to the hospital practice of psychiatry. This course is open to any medical-staff member of an associated hospital upon recommendation of his director.

The Department seeks to raise the professional level of its hospitals by systematically improving clinical research and treatment programs. The establishment of this graduate school attempts to insure for the

future of the associated hospitals an adequate supply of scientifically trained and fully competent physicians who will be able to keep pace and actively participate in the scientific advances to come.

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PROGNOSTIC FACTORS IN SCHIZOPHRENIA¹

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European psychiatry, under the strong influence of Kraepelin(4), employs conceptual and methodological differences from those used in the United States, in the diagnosis, symptomatology, treatment and prognosis of schizophrenia. The rate for lasting social recovery has been quoted as approximately 40% by various American and European investigators. Several factors have been considered by Langfeldt(5, 6) as indicating a favorable prognosis in schizophrenia. Among these are: an emotionally and intellectually well-developed pre-psychotic personality; demonstrable precipitating factors; acute onset; affective admixture; and favorable environment before and after the onset of the disorder. Investigations of the natural history of schizophrenia in this country by Hastings, *et al.*(3), have shown that 60% of all patients spent over half of their initial post-hospitalization interval in a mental institution or experienced severe adjustment difficulties which necessitated continuous care by their families. Long-term follow-up studies by Staudt and Zubin(12) have failed to show better results for the treated over the untreated in terms of recovery and improvement, with the recovery rate remaining around 35 to 40%, although the treated groups' stay in the hospital is definitely shortened and the death rate is lower in this group. It has been claimed by Donnelly and Zeller(2) that the best remission rates are achieved in disorders which are episodic and self-limiting in time, either remitting spontaneously or responding to therapy. Schofield and Balian(8, 9) have shown presumed etiologic factors to be about as common in normals as in patients diagnosed schizophrenic. If better prognostic indicators were available, results of differential therapies could be evaluated more adequately(10, 11, 13).

METHOD

In this investigation, personality, historical and demographic data of 80 consecutive first hospital admission patients with clearly established diagnoses of schizophrenia were studied. In addition, the following 4 social history variables, taken from a factor analytic study by Beck and Nunnally(1), were employed: 1. Parental rejection; 2. Absence of consistent parental figures; 3. Parental indifference or inadequacy; and 4. Parental over-protection. Each of these factors was rated for 5 traits having the highest factor loadings. Twelve prognostic factors, reported in the literature as having validity, were used. These were taken from studies by Pascal, *et al.*(7), and by Schofield, *et al.*(8, 9), and include the following factors:

TABLE 1
PROGNOSTIC FACTORS

1. Affective Expression.
2. Orientation.
3. Direction of Aggression.
4. Type of Onset.
5. Duration of Illness.
6. Precipitating Stress.
7. Marital Status.
8. School Deportment.
9. Marital Adjustment.
10. Presence of previous episodes.
11. Adjustment to the hospital.
12. Presence of ideas of reference.

The most (15) and least improved (13) patients were compared clinically and statistically during hospitalization and the most (26) and least improved (25) were similarly studied 1 year following hospitalization, to determine which factors were prognostic of hospital course, and which were related to longer term adjustment.

RESULTS

At the time of discharge from the hospital, 3 of the prognostic factors showed discrimination between those who improved and those who did not. We found that exaggerated expression of affect, rapid onset of symptoms, and a brief rather than an ex-

¹ Read at the 116th annual meeting of The American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

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tended period between the acute onset and hospitalization, are all prognostically favorable indicators at a statistically significant level. Insidious onset, accompanied by blunted emotional life, and a period of years between the first symptoms and the first treatment efforts were found to be prognostically unfavorable signs.

Nearly all the patients in both groups were oriented at the time of their admission to the hospital. Most expressed aggressive feelings outward rather than toward themselves; most had experienced only mild precipitating stress; and most had some history of previous episodes of disturbed behavior, not diagnosed as schizophrenia, however. In nearly all categories differences were in the expected directions, even though most were slight.

We found no reliable differences for such demographic data as age, ordinal position in the family, number of siblings, educational level, religion, socio-economic status, number of children, and incidence of mental illness in the family.

Only 2 items among the social history factors differentiated the groups at admission, and thus predicted from their social histories the outcome of hospital treatment. These were: "Absence of consistent parental figures", which predicted poor treatment response, and "Mothers would do anything for the child," which heralded favorable outcome. Other factors which showed a trend toward distinguishing the backgrounds of the patients, indicate that more of the improved patients came from homes in which mothers struck out in anger, rather than maintaining constructive discipline; and more of the unimproved patients lacked any real parental figure or lived with parents whose discord left the family in a turmoil and whose fathers were promiscuous and debauched. These findings suggest the importance of the presence of parents in the home, and that consistent discipline is less important than protection, family stability, and positive relations between the parents.

In comparing patients who improved during a course of hospital treatment with those who did not, we found several distinguishing characteristics. Patients who did not improve were men who at admission

were markedly psychotic, who evidenced defective functional intelligence, who were dilapidated, regressed, and apparently dull in affect. They exhibited a relative blunting of emotions and had an insidious onset of illness with a poor work history. Their early background was characterized by family discord or isolation from parental influence.

One year after hospital discharge, all improved patients expressed some religious affiliation, whereas half of those having no affiliation were in the unimproved group. Patients who maintained their improved status a year after hospital treatment were individuals who tended to express their aggressive impulses, rather than turning them inward; who had an acute onset of schizophrenia, which had a duration of a month or less prior to hospitalization; who were married and had a good marital adjustment; who did not have a history of previous episodes of severe emotional disturbance; and were management problems while hospitalized. The patients rated as unimproved at the time of the follow-up were men whose histories showed an insidious onset of illness, developing over a period of 2 years or more; who were not hospitalized until several years following onset of symptoms; who were single; and who showed some evidence of periods of emotional disorder in earlier life.

Since the statistical analyses showed few clear prognostic or social factors to be significant in differentiating improved from unimproved schizophrenics, we attempted a clinical comparison of the 7 most improved and the 9 patients least improved, utilizing detailed social histories. On the basis of this comparison, 13 behavior variables, both favorable and unfavorable, were found to differentiate good and poor prognosis in schizophrenia. These are listed in Table 2.

Items 5, 6 and 7 were characteristic of every one of the poorest outcome patients. The other items were far more frequent in patients with poor follow-up ratings than in those with good outcome. The 3 items characteristic for good prognosis were found in all of the best outcome patients and in none of those with poor follow-up ratings.

In addition, a number of similarities appeared, which we believe are diagnostic or predictive of a schizophrenic disorder,

TABLE 2

BEHAVIOR DIFFERENTIATING GOOD AND POOR PROGNOSIS IN SCHIZOPHRENIA

Poor Prognosis :

1. No behavior problem in school or at home.
2. Lack of socialization during childhood (poor relations with both peers and siblings).
3. Threatened (without cause) by parents as a form of discipline.
4. Poor heterosexual relationships throughout life (no interest in girls; fear of girls).
5. Few interests during adolescence and early adult life.
- *6. Poor work history throughout life.
7. Inability to express aggression throughout life.
8. Possible organic involvement (instrumental and/or premature birth; infectious process; head injury, etc.).
9. Inability to express feelings ("difficult to get to know").
10. Fears associated with school and/or peer relationships.

Good Prognosis :

1. Some specific traumatic episodes which might have precipitated onset.
2. Good work history during childhood and adolescence.
3. Marriage (with or without conflict).

and which were common to both improved and unimproved groups. Common among both extremes in improvement rate was a history of over-ambition. As children and adolescents many had an ego ideal with whom they attempted to identify. This was usually a father whose achievement the sons could never match. If the father was a physician or a bricklayer, their sons who also became physicians or bricklayers were never quite successful or skillful. Prior to adolescence many of these patients had made a single important achievement, such as winning a trophy or becoming the local athletic hero. Throughout life these men were identified in the community as persons who had achieved some special distinction in early life, a distinction they could never recapture. Most of the patients were described as shy and withdrawn while children. They were considered sensitive and fragile by their families. Many of them suffered from a variety of psychosomatic

symptoms. During and after adolescence they tried to break away from home. Some took jobs, some went into service early, and some also ran away from home. This often coincided with an attempted change of interest pattern from that set by the father. In all cases these efforts failed and the patients returned home; many were troubled with feelings of guilt and self-blame for their non-achievement. Usually the onset of schizophrenia was displayed in acute paranoid behavior either in service or shortly after discharge. After service they generally showed increased apathy and lack of striving, marked weight loss, few interests, and surrender to schizophrenic thinking.

Families of these patients were characterized by fathers described as heavy drinkers and harsh disciplinarians. The mothers also were described as strict, seemingly unhappy most of their lives and complained of poor health. Patients rated as unimproved frequently had schizoid tendencies most of their lives, while the more improved patients were more likely to have shown some greater rebelliousness during adolescence. The more improved patients suffered some reaction to interpersonal threat (e.g., the death of a parent) during adolescence, while the unimproved patients were likely to have had similar experiences much earlier in life.

DISCUSSION

Our data regarding prognostic factors failed to support most of the findings of Pascal and his co-workers(7). Our findings, however, do confirm some of the factors listed by Langfeldt(5, 6) as indicating a favorable prognosis in schizophrenia. Langfeldt has pointed out that precipitating factors are as a rule lacking in typical cases of schizophrenia, but that in atypical, schizophreniform conditions psychogenic traumas are frequently observed. He emphasizes that such atypical schizophrenias should be grouped and classified as schizophreniform psychoses, and he recalls his personal observation that half of the patients diagnosed as having schizophrenia in the United States would be classified differently in Europe. Langfeldt believes that research in schizophrenia should be concerned predominantly with process schizophrenia, and that it has

been quite detrimental to the progress of psychiatry "to let the whole dementia praecox idea be absorbed by the collective designation of schizophrenia."

Our clinical appraisal of the histories of the most improved and the least improved patients showed a number of characteristics typical of both extremes. These findings reveal that schizoid personality traits were evident from early life. A few social influences appeared to have favorable prognostic value; chiefly an adequate work history, some effort at heterosexual adjustment, and the presence of precipitating stress. These factors suggest that the distinction between improved and unimproved patients may be based on a fundamental difference between reactive and process forms of schizophrenia, and support the view of those who hold that such a diagnostic distinction has merit.

SUMMARY

Four social history and 12 prognostic factors, reported in the literature to have statistical validity, were studied in this investigation. In addition, personality, historical and demographic data of 80 consecutive first hospital admission patients were compared clinically and statistically during and 1 year following hospitalization.

Some factors were prognostic of hospital course, while others were related to longer term adjustment.

A clinical comparison utilizing detailed social histories of the most and least im-

proved patients, produced 13 behavior variables, both favorable and unfavorable, which differentiated good and poor prognosis.

In addition, the data give empirical support for some theories of etiology in schizophrenia.

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THERAPEUTIC DEVELOPMENT AND MANAGEMENT OF AN ADOLESCENT RESIDENTIAL TREATMENT SERVICE IN A STATE HOSPITAL¹

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The treatment of adolescents in an adult state mental hospital has become an increasingly complex problem. At Warren (Pennsylvania) State Hospital, the number of such patients under the age of 20 years admitted with functional psychiatric illness other than sociopathy has risen from an annual rate of 10 in the 37 years preceding 1950 to 28 in 1959. In addition, generally, these patients were more seriously ill than adults.

Although there is a large children's unit in one of the state mental hospitals, its facilities are sorely overtaxed and admissions are slow. Also the great distance of this unit from our geographical area has made parents unwilling to send disturbed children there, and instead we find these children admitted to our hospital for care.

Our experience has indicated that it is a fallacy to expect these children to adjust better to an adult ward than to one designed specifically to meet their many different needs. These children cannot be expected to develop a more integrated personality by identifying with adult models who are themselves grossly disturbed. The children lack normal heterosexual social experiences in the usual adult ward, making later social adjustments difficult. Also, if they are to be adequately rehabilitated, they must continue their education and such facilities are completely lacking in the usual adult state hospital. Additionally, the social goals of the adolescent differ greatly from those of the adult and therefore even normal adolescent behavior would not be tolerated by the patients or attendants on the usual adult ward.

Identifying these needs we developed the present adolescent unit in our hospital, making use of existing facilities and personnel.

An attempt was previously made to establish a small unit for grouping 7 or 8 adoles-

cent girls, but this effort ended in failure after only 2 months. There was, in retrospect, a lack of active support by the upper echelon of medical, nursing and administrative personnel, and a lack of understanding and interest on the part of the involved nursing and attendant groups with inadequate communication of the aims and goals to them. In addition, there was a poor selection of patients in that 40% were sociopaths. Also, the use of unsuitable living quarters—a small dormitory in a large ward of middle-aged women—resulted in daily friction between the children and adults, both patients and attendants. Finally, there was an absence of a structured adolescent oriented program. Instead the adolescents were fitted into the daily routine of the adults in more or less random fashion.

Therefore, in September, 1957, when we proposed the opening of the present 10-bed units, one for boys and one for girls, we were met with considerable resistance. There were fantasies expressed of wholesale destructiveness and feelings that the overt behavioral problems of these adolescents would be geometrically increased by their being concentrated in one area rather than being diluted through several adult wards.

SELECTION OF PERSONNEL

The employee complement consisted of one psychiatric attendant per unit on each working shift under the full-time supervision of a third-year psychiatric resident physician and all responsible to a staff psychiatrist. Since these people would work intimately with adolescents and participate in much of their activity, a decision was made to use only persons under the age of 40 as they would be more physically active, tend to be less emotionally rigid and biased, and have fewer pre-conceived ideas of normal or abnormal adolescent behavior. The possibility that the adolescent group might activate latent personality problems in the employee was also considered in the choice; despite

¹ Read at the 116th annual meeting of The American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

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this, after 3 months, it was found necessary to transfer one of the male attendants to another area after he became unduly concerned and covertly punitive to a boy who engaged in transient masturbatory activity.

The various employment practices also created problems. The regularity of 3 employee shifts a day produced irregularity in the concept of father and mother figures. Also the turnover in state hospital employees at times was quite rapid and could give rise to further difficulties in establishing the stability of parental surrogates. Fortunately, we have maintained the day and evening personnel almost unchanged throughout. The modern custom of the 5-day work week posed another stumbling block; this was handled by having the replacement days occur on week-ends when the adolescents were more likely to be visiting away from the hospital.

SELECTION OF PATIENTS

Initially, there were few limitations on the selection of patients and as a result we were frequently confronted with over-zealous attempts of the professional staff to incorporate within the adolescent group young adult patients over the age of 19, who were "emotionally just children." Several of these individuals were tried in the unit without success, not only because they were physically, experientially, and educationally more mature, but also because they were offended by the daily activities which fitted the needs of the adolescent. The severe and obvious sexual deviant was initially brought into the program, but found disrupting. Patients who had sociopathic personality disturbances, primary mental deficiency, and those with organic brain syndromes were also excluded. Found to be treatable in our unit were adolescents with schizophrenic reactions, neurotic disorders, character disturbances (primarily passive-aggressive), those with lowered I.Q. on the basis of interfering factors of an emotional nature, and those in whom sexual maladjustment was clearly secondary to other functional illness.

It soon became apparent that a necessary part of the intake policy was to have interested parents or parental figures outside the hospital in regular contact with the patient, psychiatrist, and social worker to work

through parental roles in the disintegrative factors operating and plan for the patient's future.

Several admissions were refused on this basis; surprisingly enough one case was that of a boy with a character disorder referred by a county juvenile court which refused to accept the expense or responsibility of appointing the juvenile agency to work with the patient and hospital. There was also in many instances the problem of travel for these parents in view of the area which this hospital served, the outer limits being over 125 miles.

USE OF AVAILABLE HOSPITAL FACILITIES

Immediately available hospital facilities consisted of 2 small wards of 10 beds each at opposite ends of a very large building, housing male patients in one half and female patients in the other. Although we would have preferred the 2 wards to be adjacent, the existing structure made this physically impossible. However, children were treated as a coeducational unit, except for the actual ward living-sleeping situation.

As the children improved, hospital shops such as the garage, plumbing, electrical, radio, paint, woodwork were offered to individual children as apprenticeships. Nurses' aide and home economics courses were devised by the nursing staff for some of the girls and a special agriculture course by a farm and ground supervisor for some of the boys. A coeducational class-room was formed for elementary teaching, staffed by part time volunteer certified teachers.

A problem was immediately created by the wide range of educational needs of the children. In conference with the teachers we found the best approach was in the use of a basic educational core of remedial reading as needed, along with social studies, general science, some math, art, and news-writing assignments for the hospital weekly newspaper. The psychiatric aides were used as class-room assistants and to continue certain assignments. In the beginning we had serious doubts that the adolescents' attention could be directed for more than 30 minutes in formal class-room work and so limited the time. We soon found to our surprise that this was an error and accordingly lengthened the class-room time to 2 or 2½

hours without difficulty. The recreational and occupational therapies occupied additional hours weekly so that the children were engaged in crafts, sports, dancing, parties, band, chorus, and other group activities. Parenthetically, some of these activities were carried on in the family atmosphere of the homes of some of the staff.

COMMUNITY FACILITIES

One of the guiding principles in the program was to place the patient into normal adolescent activities, and as much as possible, with normal adolescents. Consequently, we utilized many of the community facilities available in Warren, Pa., a small town of 15,000 about 3 miles from the hospital. For example, the patients belonged to the local Boy Scout and Girl Scout Area Councils, had their own troop, attended the area Scout Camps throughout the year, joined in the County Jamboree, Explorer Scouts, and related activities. To our knowledge the hospital Boy and Girl Scout troops were the first of their kind in the country. The adolescents were also part of the county 4-H group and were involved in some of their congregate activities.

The community recreation parks, state parks, roller skating rink were used and in addition, the Y.M.C.A. swimming pool. Opportunity was also given to attend the dramatic play series, concerts, basketball and football games. These activities were interspersed through the month in an amount similar to that of an active adolescent. Nevertheless, many of the patients did say that they had learned to do more things in residence than ever before in their lives.

During the last year, as a result of excellent cooperation and liaison with the local Junior and Senior High Schools, we enrolled a total of 8 children in the 8th to 12th grades, taking a general academic course. These patients rode the school bus to and from school, bought lunch in the school cafeteria, were involved in extracurricular activities, and got their notices in the school paper. One patient graduated from high school last year and 2 more are now in their senior year. With special dispensation, these adolescents were allowed to start classes at such time during the year as their emotional and educational status permitted and when

they left the hospital, credit was transmitted to the home school. In the future we foresee a greater number of children attending the public school system.

The area State Vocational Rehabilitation Officer has assisted in utilizing local industry for apprenticeship and on-the-job training for some of the older adolescents while in residence. Recently a 19-year-old girl learned the skilled industrial art of china and pottery striping and left the hospital to be self-supporting.

Additional community participation was arranged through the invaluable aid of the hospital Volunteer Service by enlisting service and materials from individuals, clubs, groups, and County Mental Health Associations. The volunteers have been able to provide spending and school lunch money as needed, radios, washing and sewing machines, clothes, books, school equipment, and several retired school teachers to conduct basic education on the hospital grounds. One recent innovation for the children who attend community schools has been providing community sponsors, usually the parents of other adolescents in school. Such sponsors assumed guidance for these patients when they attended in the community invitational group, school, or adolescent social functions, which occurred in the evening or on the week-end.

MANAGEMENT EXPERIENCES

After 2 1/3 years experience in the operation of adolescent residential treatment units, the following observations are offered. We have found that the successful development of a therapeutic milieu evolves only after careful planning. Initially, there must be active support of the ward personnel by the staff which should begin before the unit is operational and then be followed by group and individual conferences with all interested personnel to maintain unanimity of direction and purpose. Psychiatric aides who have functioned well with adult patients frequently are bewildered when dealing with children; this poses a threat to the aides and their problems are handled by daily individual and bi-weekly group conferences. Frequently too many well-meaning personnel on the periphery try to become involved by "wanting to do things"

or literally trying to adopt the wards temporarily as if they were a new kind of hospital toy. The effect on the patient is similar to that on a child whose competitive parents vie for his favor, and the patient is overloaded with intrusive affective experience.

Next, there must be a well-defined structured program for the guidance of ward personnel and not a vague schedule in a hit or miss fashion. Our early experience in which we tried an extemporaneous schedule was most damaging, with the children frequently complaining of boredom and the personnel of lack of perspective. Also our attitude about patient control is now much more fluid than at the outset, in that more responsibility is gradually given the patient when this is beneficial, *e.g.*, in community school attendance, individual and group participation in adolescent community social events, and week-end or short-term visits at home. The latter item is of great importance inasmuch as the patients showing slower recovery tend to be those with disinterested parents who make infrequent visits and seldom take the child home. In contrast, when the adolescent visits at home, he very frequently dispels the family's fear that he cannot or will not recover and this promotes a stronger family union. Visits with the parents, whether in the hospital or at home also relieve the adolescent's fear of being abandoned and forgotten.

We feel the hospital education program by the volunteer teachers functions best when it is not too complex. Our experience has shown that a large percentage of severely disturbed children have serious reading impairment. Thus, primary emphasis was given to remedial reading followed by general classes in social studies. Dramatics, newswriting, hospital library assignments, and individual tutoring were also used. For children attending community schools, a staff member held conferences with the student and the school curriculum or guidance counselor to arrange the school program. It is our feeling that education is the function and responsibility of the school and except for the pertinent psychiatric evaluation which we supplied, we have never interfered in the school's prerogatives with the students. Later through subsequent bilateral

conferences, many incipient or fantasied difficulties were alleviated.

The more classic forms of psychiatric treatments were not neglected. Although electroshock and insulin coma therapies were not used during residence in the unit, the various tranquilizers were frequently administered; their use tended to be more confined to the older children. Great importance was placed in psychotherapy, in that all the patients received group therapy 3 hours per week throughout residence. Initially the children were seen in 2 groups divided according to age. Later we found it more successful to have one group for boys and one for girls, meeting on their own wards with the ward attendant included as an integral member. The discussions centered around the "here and now" events on the ward, at school and at home with individual and group transference manifestations being interpreted by the leader or the group members. Almost half of the adolescents received individual psychotherapy averaging about 2 hours per week. However, we found that both group and individual psychotherapy was best managed by the psychiatric staff or by the most senior residents. Early attempts in which supervised junior residents handled groups or individual cases frequently ended with that resident asking to be relieved or feeling quite helpless. This situation invariably occurred when these severely ill children did not respond to the supportive or analytically oriented types of therapeutic approach that the resident was learning to use with adults. Generally in either group or individual psychotherapy little attempt was made to uncover threatening unconscious material. Instead emphasis was placed on establishing the adolescent's self integrity as a person, as well as discussing the past and present models used as a basis for this.

Two final observations should be noted. We strongly feel that such a program should be conducted coeducationally and finally that the problem of destructive activities does not exist. With unlimited opportunities to damage furniture, and other equipment, the 2 1/3-year toll has been a few window panes and one toilet plugged with a roll of paper. No activity or property has ever been withheld because of fears of damage. In

short, if the adolescents are not expected to be destructive, they apparently will not be. This appears also to be due to the patients helping each other, especially with the ones more sick, and using an internal group pressure to draw the more disturbed patients forward and control destructive behavior.

SUMMARY

A total of 47 adolescent patients (26 males and 21 females) were treated in our units in 2 1/3 years of operation. This total includes those patients previously mentioned who were subsequently found to be untreatable. There were 39 schizophrenics, 4 neurotics and 4 character disorders. Disposition of the patients did not significantly differ according to the sexes: 24 left the hospital as improved. These patients spent an average of 8 months (range 3 to 22 months) in the units. Sixteen adolescents are now in the units in active treatment and have spent an average of 11 months there (range 1 to 27 months). Seven patients were transferred unimproved to other parts of the hospital after spending an average of 12 months (range 1 to 23 months) before transfer.

The 7 treatment failures were characterized as follows: Two patients were completely uncommunicative, one on the basis of organic damage, the other being severely autistic from early childhood. Two patients were in fact too old for the unit, being 20 years or over. One patient was a homosexual sociopath. One patient regressed to the point of being a completely infantile nursing problem who could not be adequately cared for in these active units. Finally, 1 of the older adolescents, having shown some definite improvement after 1 year, reached a plateau with little further change and was transferred to the insulin unit for further treatment.

It is our opinion that an adolescent unit is a necessary part of any adult state hospital which admits these emotionally disturbed patients. We feel that a unit such as ours can be established wherever there is interest in the care and treatment of the adolescent, by making full use of available hospital milieu and community facilities.

This presentation was not intended to contain the dynamic transactions and interpersonal operations of the patients and per-

sonnel in the units or of the parents and the hospital staff. This will be the subject of a later report.

DISCUSSION

JOSEPH E. BARRETT, M.D. (Knoxville, Tenn.).—The authors' presentation certainly points up the need for good pre-operational planning, programming and selection of personnel in this highly special psychiatric field.

We developed a similar unit at Eastern State Hospital in Williamsburg, Virginia, with many of the trying conditions and situations mentioned by the authors.

The selection of adequate living and activities quarters is of major importance. The selection of the strongest and, as nearly as possible, indestructible quarters should receive top priority. In our experience these patients are much more destructive than the usual adult mental patient. This is not always because of overt destructive tendencies but because of a tendency to greater physical activity than is seen in the usual adult patient. If we think for a moment that these youngsters are going to sit quietly in a day space until called upon or that they are going quietly to bed at 7 or 8 o'clock and sleep until morning, we need to revise our thinking.

The program of supervised activities should be well worked out for a full day until around 10:00 P.M. The continuation of their schooling is most important and we have found the Department of Education both interested and helpful. In the program at Williamsburg they were most co-operative in supplying much of the material and even some of the full time teachers who were specially selected with their approval, and this gave the school program an accredited status. This is especially beneficial when the patient is ready to return to the regular public school system. We tried for a while to have some of these children go to the local public schools but had to give it up because of some complaints. There is still a feeling of contamination by some when coming in contact with anyone from a mental hospital.

We found that for a while at least school work had to be done with these children on an individual basis. So it is fortunate indeed when the hospital is located near a teacher training institution and use can be made of such students from the college. Selected volunteer services from the citizenry are also quite helpful. We found many such persons who were sincerely interested in this type of activity. Daily school sessions are necessarily short, so plans for much supervised recreational and other

activity must be made. Here again students from the college in this special field of recreation and physical education are most helpful. Community facilities, such as: swimming pools, skating rinks, bowling alleys, *etc.*, are readily available at special hours for here again there is a fear of contamination of so-called normal children by contact with these sick children, who are in so many instances craving companionship. For a while we conducted classes for girls and boys separately, but the whole atmosphere improved remarkably when we went to coeducational classrooms. The same was true in connection with recreational activities. There were some problems which developed between the older boys and girls but I understand that is not uncommon in the regular public schools.

The reassignment of facilities in a state mental hospital, to accommodate a part of the needs at least of adolescents and even younger patients with emotional problems will no doubt have to continue at least until the public sentiment becomes sufficiently strong to compel the building of special facilities for this purpose. Where to build separate facilities is still a moot question and there are many good arguments pro and con relative to establishing these on the grounds of already established hospitals. One of the strongest arguments for building them on the grounds of already established hospitals is probably that of utilities, maintenance, upkeep, and food service. There are also

advantages in cases of personnel shortages, as it has been necessary from time to time to draw upon the hospital nursing personnel for assistance.

The hospital administrators are to be commended for their willingness and assistance in developing these facilities in the face of their many other needs. It must be realized that without their sympathetic understanding very little could be done.

The selection of nursing and ward personnel to spend long hours with these children cannot be over-emphasized. There must be a strong empathy with these youngsters and a willingness to vie with them. I mention, for thought, such relationships as always existed with one negro attendant, a college graduate. At any time he was on duty, day or night, everything was serene; all were busy, there was always a feeling of freedom, but at the same time there was a profound respect, and everyone was busy at something, apparently striving to reach a goal. I studied this situation quite a bit as to why and how, but that is a long story.

All of this must, I believe, be under the close guidance of a psychiatrically trained physician who should if possible have no other duties about the hospital. These facilities, where developed and properly organized, can offer a helpful addition to the programs for training physicians and other special personnel, who are interested in the field of child psychiatry.

TEACHING THE INTERPRETIVE PROCESS TO MEDICAL STUDENTS¹

SIDNEY L. WERKMAN, M.D.²

The critical point in the psychiatric diagnostic process is the final interview in which findings and recommendations are discussed. At this time the psychiatrist's understanding of a case is shared, his specific advice in regard to further consultation, placement or treatment is given, and he has an opportunity to assess the probability that his advice will be followed. These aspects of the final interview—the explanatory, elucidative, interactional ones—are what is meant by the interpretive process in this paper. We are not concerned here with the formal psychoanalytic definition of interpretation, that is, the processes involved in making unconscious ideas conscious. The interpretive process is of paramount importance in general medicine, surgery, pediatrics and other specialties as well as in psychiatry, for the success of communication of interpretation, be it recommendation for operation or proscription of certain foods, is necessary for adequate care to follow. Yet the teaching of interpretation is often neglected for a variety of reasons, among them being oversight, an exaggerated belief in the student's capability, a belief in the necessity for each individual to work out his own "style" idiosyncratically, or a recognition of the difficulty of teaching this phase of the "art" of medicine. However, I am sure that it has struck many psychiatrists that the diagnostic process in child psychiatry is particularly suitable for the teaching of interpretation.

Diagnostic evaluations in child psychiatry literally force an awareness of dynamics on the psychiatrist or the medical student who

hears different points of view from parents, the child in the playroom diagnostic interview, teachers and psychologist, and must try to fit these together. A great amount of important material can be amassed from these various sources in a short time and a good view of the longitudinal development of a child can be gained. Further, the student functioning as psychiatrist has the opportunity to share his findings with parents in a way that is sometimes not possible with adult patients. That is, the parents, in fortunate cases, can be called upon to be ancillary colleagues in the treatment of a child's emotional difficulties, a circumstance not often present in work with adults. I will, therefore, use the situation in child psychiatry as illustration for the interpretive process in general, though the primary emphases will be on the way medical students handle the process and on methods of helping them to gain mastery of it. (Many of these observations would seem to be relevant to the practicing physician, but are derived from student experiences because such experiences are available to us and can be studied in detail.) We assume in our teaching that involvement of the student in the actual experience of evaluation of psychiatric problems in children and in the discussion of findings and recommendations with parents is a valuable and economical way of teaching. This assumption is not held in all medical schools as evidenced by reports of various teaching programs(1, 2).

THE INTERPRETIVE PROCESS

This discussion will not dwell on the diagnostic process prior to the time of interpretation. Suffice it to say that by the time the medical student approaches his interpretive interview with a child's parents he has seen one and usually both parents for two or three history interviews, he has observed a skilled psychologist administer appropriate psychological tests, a social worker has supervised his handling of the

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³ I gratefully acknowledge the collaboration of my colleagues, Sidney Berman, M.D., Erna Bowman, M.S.W., and Sally Segman, Ph.D., in formulating the ideas in this paper.

case, he has had a discussion with a child psychiatrist on the use of the playroom diagnostic session and then has had such a session with the patient, calls have been made to schools, family agencies or other relevant sources of information, he has taken part in a diagnostic conference on the case led by a child psychiatrist, and, finally, he has had a session with a child psychiatrist to clarify issues in the case and prepare him for the interpretive interview, which he will conduct alone or with a student colleague. This general process is reviewed in a previous paper from this department(3). From the many aspects of this process, the one involving psychiatrist and medical student will be examined in detail.

The core problem of interpretation is well stated by the medical student as "How do I tell this mother that her little boy has unmet emotional needs?" It might also be stated as the problem of transforming dynamic concepts into language that can be understood by parents and that is action-directed. It is obvious that this concept of interpretation views it as much more than a statement that "Your child needs psychotherapy." In addition to clarifying dynamic concepts for parents, it is a time for the giving of direct and sometimes painful advice and an opportunity to "sell" the child back to its parents. Also, it is a time for clearly stating the outlines of time, stress and money involvement projected, and a very important opportunity to prepare parents for what they might expect from the child in the ensuing period of work or planning.

All these problems and techniques are worked on in the session with the student that occurs after an entire case has been summarized and its dynamics worked out in a diagnostic conference. A recent GAP report(4) emphasized the importance of this facet of the student's training as follows: "The medical school must train the student for a new social role requiring extensive changes in his attitudes and behavior. He must learn a host of diagnostic and therapeutic skills as well as the technique of entering into a special professional relationship with other persons. . . . Since these situations are often emotionally trying, an important aim of all medical educa-

tion is to help the student become master of the emotions evoked by his dealings with patients. In general terms, the most effective way to bring about changes of this kind is to immerse the student in a new group whose standards represent the attitudes and behaviors he is to learn."

THE STUDENT'S IDENTITY AS A PHYSICIAN

The "set" or environment of the interpretive interview is determined largely by the student's view of his role. The ability of parents to "hear" and profit from the interpretation is dependent upon their acceptance of the doctor's position of integrity and knowledge. This is particularly so since the child psychiatrist has relatively few pills or procedures to offer other than those of thought and action. Thus, even pre-supposing a good knowledge of dynamics on the part of the student, the success of the interview is still dependent on his being able to "get across" to the parents.

Definite problems arise when the student feels inadequate to the role of being a student physician(5). This is not to say that he should have the feeling of an experienced child psychiatrist entering the interpretive interview, but rather that he should see himself as a person with some experience in medicine, who has had the opportunity to study the case in point at some length and with expert help, and who looks forward to the interpretive session as one of learning for himself and of service to the patient and his parents. In addition he should have a comfortable recognition that difficulties might well come up and that he is not expected to have all problems solved prior to the interview. Lacking this identity and a recognition of his importance to the parents, many problems can arise.

When the student's sense of identity is not adequate he is vulnerable to a number of errors in the over-all handling of the interview. Thus, students neglect to introduce themselves to parents, pass over any warmth or pleasantness that can be helpful in starting an interview, and overlook such simple things as using the actual names of the parents instead of "mother" or "father." Such problems as becoming over-familiar,

pompous or "deliberately vague" are sometimes not deeply set characterological ones, but rather the student's picture of what the psychiatrist should be. They are, therefore, susceptible to modification in a useful direction. The basic character organization of the student is important, but also certain elemental lessons in tactfulness, etiquette and warm concern for other people must be inculcated if they have not been so earlier.

Uncertainty on the student's part can accumulate anxiety, and result in his taking a punitive role with the parents, *i.e.* "Your son has trouble in school because you moved twice when he was a little boy and because you didn't spend enough time with him." "How do you expect a boy to grow up well when you started working almost as soon as he was born?" Responses such as these often reflect characterological problems of the students deriving from their relationships with their own parents and are a source of their helplessness. They see problems in the patient and his family, but recognize that these very problems were present in their own lives and were not resolved or were handled by punitive measures only. They then repeat with their patients the very methods they abhorred so much as children, because they know of no other method.

ORGANIZATION OF THE INTERVIEW

Often, the student has no idea how he is going to organize the interpretative interview. Though possessing good knowledge of what should go into the interview, he is at a loss to structure his knowledge. He sometimes rationalizes this by citing the psychiatric therapeutic interview which, to him, is ideally unstructured.

Such students start out interviews with parents by asking them "What do you think is the matter with your son?" or "Do you have any questions?" Such questions after a number of hours of historical material, conference, psychological testing and playroom material are naturally jarring to parents and reflects the student's helplessness. Having almost drowned in opening the interview, the student, if left on his own, often follows up with variations of such gambits as:

Appeal to will power: "That's a problem

that he just has to overcome." (In regard to enuresis.)

Unconscious jealousy and competitiveness: "I don't believe in telling lies to people about their children." (When it was suggested that some of the strengths of a child might be emphasized.)

Pussy-footing: "We've found that there's not much the matter and that your little girl is really in good shape." (In regard to an 8-year-old girl whose problem was school failure.)

Retrospective guilt production: "This happened because you moved so much when he was a little boy, and because he never had a father."

Magical solutions: "He'll grow out of his tantrums if you just don't pay any attention to them."

Punitiveness: "She needs a good going-over by social service." (Said about a mother who was unable to offer warmth to her child.)

Because of these problems it has proved useful to give the student an idea of a reasonable organization of the interpretive session after he has presented his views about it. This is done by introducing role-playing to make the situation as vivid as possible. When confronted with "Here I am; I'm Cassandra's mother; What did you doctors find out about my daughter?" the process that evolves, interspersed with the puzzled questions of the supervisor in the role of mother or father, enables students to recognize how effective they can be. At the same time they are made aware of the boxes into which they can talk themselves.

Role-playing helps them experience the necessity for organizing an interview, the importance of timing of various statements and the potential hurt they can inflict or help they can be. If the students get stuck the supervisor may add a clarifying statement or suggest a way of phrasing a point, thus offering some opportunity for the students to identify with him. During this interactive, role-playing process the following general organization of the interpretive interview is taught the student:

1. His first job is to greet the parents with some warmth and perhaps a casual comment, as peers and dignified human beings.

2. On beginning the interview he reviews the various studies, historical material and tests that have been done. He reviews with the parents what his concept of the presenting problem is.

3. Some positive statement about the child reflecting playroom observation is usually helpful. "Johnny was able to come right in the playroom and get involved in playing with the dart gun, and he had a lot of fun with me. I was impressed with how comfortable he was with a strange person." "I was struck by the interest Johnny shows in things around him, how he is able to make up games in a very imaginative way." It is also useful to recognize how sincere and sharing the parents have been with relatively sensitive aspects of their lives.

4. Interpretation of dynamic material : to be discussed later.

5. Recommendations : They should be clearly in the student's mind, and he should be prepared to give addresses, telephone numbers, *etc.*, for future contacts. If he is referring the child to a boys' club, he should either give the parents the name of the club, or make specific contact for them with a case worker who might follow through on such recommendations.

6. Recommendation of psychotherapy : Students tend either to make a psychotherapy recommendation at the start of the session without preparation for it, thereby incurring hostility or confusion, or they are so apologetic about the recommendation that parents don't understand or accept it. ("And I think that it may be helpful for Johnny to have a little therapy, maybe.") However, in preparation, their experience with the diagnostic process can be reflected on with them as an actual example of the technique of child therapy. With the aid of discussion they are able to formulate with conviction some judgment of the necessary length and nature of psychotherapy and the crucial importance of having parents involved in the treatment of a child. I am convinced that the student's feeling of involvement, and even anxiety, in a playroom diagnostic interview or his investment in interviews with parents are necessary elements in having conviction when interpreting the need for psychotherapy. If students

have had these experiences and have been prepared satisfactorily, they offer a realistic plan for treatment. With this method of preparation we have had a surprisingly high response to recommendations for psychotherapy from parents in a socio-economically depressed, relatively unstable environment.

7. Interpretation of non-psychological findings : When brain damage, physical handicaps or ancillary medical problems are present, students frequently pounce on them and want to deal with them to the exclusion of dynamic problems. For example, there is great relief when an enuretic child is shown to have a small bladder. This appears to remove responsibility from the parents and child and lulls the student into believing that he no longer has to consider problems of dynamic relationships.

Our counter is to anticipate this difficulty, assign a relative weighting to such findings by discussion with the students and, finally, to point out the presence of dynamic problems unsolved by organic findings. A major hazard is the attempt to attribute all problems to an either organic or emotional etiology. Judicious recognition of constitutional variations and, occasionally, a realistic tentativeness in assessing the importance of various etiological factors, seem to permit students to encompass much more of dynamics than does an attempt, usually incorrect, to convince them that "relationship is all."

INTERPRETATION OF DYNAMIC MATERIAL

The playroom interview is a pearl of great price in teaching. It gives fairly spontaneous, direct symbolic material about relationship that, when integrated with other aspects of the diagnostic study, can be told to the parents directly. This is particularly useful for it is not expected that the medical student, and, indeed, the practicing pediatrician will have the background to interpret more subtle interactional dynamics at this time in his training. We might look to a time when much more emphasis on understanding human beings is included in medical school curricula, but at the present time would depend upon "common sense" understanding combined with some knowledge of dynamics. This is

an important distinction, for the medical student who is interested in human beings often dives very deep for the answers to give parents, thereby confusing himself and the parents. It seems more useful to admit the limitations of experience and work at the level at which the student is actually functioning.

Example: The parents of a 7-year-old boy were seen in an interpretive interview after a study in which the presenting problems were tantrums, infantile speech, listlessness and poor school work. In the playroom the youngster was unspontaneous, quite slow in his play, and would not get involved in a pleasurable way with the examiner. His finger was in his mouth and he was quite tense. The parents were baffled, angry and disappointed in their son. Despite the slowness and disdainfulness shown by the youngster, he couldn't help himself from saying quite warmly as they left the room "Can I come back?" The examiner was able to see the wish for relationship on the part of the boy and how fear inhibited him. There were observations from school describing how he cried, needed to have things his own way and was a general nuisance—rather critical statements about the boy. In the playroom session the examiner was able to see that he was also a frightened child. Psychological evaluation revealed considerable immaturity and evidence that the boy saw himself as incomplete, a one-eyed boy, a boy with body parts missing and not able to do things as well as other children. As a result of these insights the examiner was able to reflect his understanding of the boy's tension and feelings of inadequacy and, in a way, to "sell him back" to the parents as a frightened boy who very much wanted to reach out and to be reached out to. He was able to suggest that the father spend more time in playing with him, that the boy be encouraged to play more with other boys and to be directed toward a Cub Scout group. Historically, there was evidence that the youngster had been kept on a bottle until he was four, that he slept in bed with his sisters and that the parents tended to give in to him. It was pointed out that children like to feel a sense of responsibility and are more comfortable when given definite controls by parents. It was suggested that the boy be moved to a separate room from his sisters for sleeping, to emphasize that he was a big boy rather than a baby at this time. While discussing this case prior to interpretation the student said "I don't know what to tell them. How

can I tell them 'You're babying your child too much.'"

He was not certain that he could tell the father that he should spend more time with his son, as the student saw this as a critical statement. He also was helpless with his own feeling that "Answers have to come from within the patient, you can't tell them what to do." This was a problem in confusing deeply internalized compulsive mechanisms and the relatively flexible, malleable character of the child. Considerable discussion of these problems prior to interpretation allowed the student to feel more free and enthusiastic about the interpretive process when he went into it. This particular student had originally planned to point out that "This is a compulsive boy and he can't do anything about it. What he needs is psychotherapy."

The variety of views of such a child is both confusing and clarifying to the student. He is forced to think in a number of different ways about a single case. That is, the boy who is "mean" and gets into fights, shows himself to be a frightened, immature youngster in the playroom, crying for a bottle and still fighting the developmental battles of infancy. The student can then understand the meaning of "infantilization" on the part of the mother. The playroom interview gives him material to interpret to the parents in a most vivid way. He has actually related to the youngster and has a feeling for the problems faced by the patient and his methods of dealing with them.

THE USE OF ADVICE

Students often hesitate to give direct advice to parents. This hesitation stems, in part, from their image of the psychiatrist as a non-directive person and from the recall of their own helplessness in handling problems similar to those of their patients. ("How can I tell them to change when I was afraid of the dark when I was eleven?") However, of equal significance and with more possibility of change, is the lack of a definite conception of what constitutes good child development practice.

The importance of regularity, firmness and consistency in setting controls, and

the handling of usual developmental crises such as the birth of siblings, night fears, school problems or transient enuresis are seemingly not encompassed in any systematic view by many students. It is refreshing to work with the occasional student who has definite common sense ideas about such problems and who comfortably advises about them even without a thorough knowledge of psychodynamics. It is possible that much of the non-specific reassurance given to parents is not a function of character problems in students but rather of a simple lack of knowledge of how to handle specific situations.

CONCLUSION

We are by no means finished in our exploration of better ways to teach the interpretive process, and it is obvious that many other factors not covered here are involved in the process. Certainly a great deal of psychiatric learning occurs before this experience just as a music student masters volumes of scales and technical exercises before he is able to enjoy working on a concerto. The interpretive process in psychiatry is a concerto with specific technical, organizational, dynamic and stylistic demands. In the teaching of this process, questions about child development can be clarified, distinctions between diagnostic interpretation and psychotherapy are made, problems concerning the weighting of organic disorders can be examined, some prejudices about psychiatry can be melted

and the student's identity as a physician can be strengthened.

Student response to this method of teaching is of interest. Following the actual interpretation interview, we discuss their impressions with the students. Here are several of them: "We were just slugging it out with her. I didn't know where I was going part of the time. The main thing, though, is until now I didn't see how we could do anything, and now I think we've really helped her." Another: "When I found out I had to come over here, I thought, 'Oh, God, listen to somebody else's troubles.' But this was different. This brought everything together. I never knew what psychiatry was before this."

The enthusiasm and involvement of students in this program suggest that it is valuable to focus on teaching this phase of psychiatry. This paper has been an attempt to detail one method of doing so and to discuss issues that arise in the course of this teaching process.

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PSYCHOTHERAPY AS A SYSTEM OF ACTION¹

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In this paper we shall discuss some issues raised by a four-year study in which techniques and concepts from the sociological theory of small groups were applied to the psychotherapy situation in the hope of furthering our understanding of this relationship.

A study of the social system aspects of the psychotherapy relationship is somewhat analogous to a study of the grammar of the English language. Just as one may be unaware of the syntax and grammar underlying his communication, so may therapist and patient be unaware of certain regularities underlying their interaction(1).

The challenge of such an inter-disciplinary effort has been well formulated by a philosopher of science(2) :

... of all forms of mental activity, the most difficult to induce is the art of handling the same bundle of data as before, but placing them in a new system of relations with one another, by giving them a different framework.

While the main findings of the study have been reported in detail elsewhere(3) this paper concerns itself mainly with some of the questions raised for the psychiatric clinician.

What is meant by "applying sociological concepts and methods to the study of psychotherapy?" What purpose does such a study serve? Two major points of departure are involved. In terms of *methodology* we assume the position of an outside observer while in terms of *theory* we view the psychotherapy relationship as a social interaction system.

What is to be gained by assuming the vantage point of the outside observer? First of all, he is not limited by the theoretical postulates of the participants. He is in a position, not enjoyed by them, to review the same body of data repeatedly, to ana-

lyze the same communicative acts from as many points of view as his imagination will permit, and to arrange and cross-tabulate the material in a variety of sequences and patterns.

Taking the position of such an observer enabled us to quantify a number of different dimensions of communications and expectation and has shown the feasibility of creating a research approach that can be adapted by other workers to study dimensions of therapeutic communication of interest to them.

In such work, of course, to quote Bales, "one must give up the pleasure of believing that one can understand everything at once from the grand vantage point of the eagle and accept instead the plodding way of the burro"(4).

Now, what about the concept of system in relation to psychotherapy. When two or more people interact, the sociologist finds it useful to consider them to comprise a system. This concept has been applied and studied in diverse social contexts, such as the family, problem solving groups, work groups.

Social systems like other systems are postulated to possess certain common characteristics (system processes and properties). Among these are :

Interdependence—the existence of determinate relationships among the parts or variables, or, in other words, the units of the system are related to each other in an orderly fashion.

Equilibrium—the order exhibits a tendency toward self-maintenance: it need not, however, be a static self-maintenance. It may be helpful to think of a social system as "an accounting system which takes account of deficits and surpluses that appear ... in such a way as to tend toward restoration of certain balances"(5).

Differentiation—Differentiation is defined as a temporal or phase phenomenon in which the behaviour of the participants is seen to change over time in an orderly

¹ Read at the 116th annual meeting of The American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

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fashion. There are regular increases and decreases in the frequency of certain forms of behaviour.

Viewing therapy in this light implies that in addition to individual psychodynamic processes, one must take account of behaviour as determined by system processes and properties.

These system processes appear to lie outside of the awareness of the participants. With regard to the psychotherapy situation, this seems to be due to, among other reasons, the clinician's lack of familiarity with social science concepts; his necessary commitment to psychodynamic content and meaning of patients' communication; and to the temporal characteristic of such processes, that is, they occur too slowly or too quickly to be kept track of consciously.

The significance for the clinician of our emphasis on system may be put this way: What is latent for the personality are "unconscious" processes while what is latent for the social system are system processes. By making an individual conscious of hitherto unconscious processes, one increases his adaptive control and flexibility. The identification of system processes can serve a similar function for the therapist. By enlarging the therapists' awareness of all processes taking place in the therapy system, one may make possible an increased measure of responsiveness and control on his part(3).

What was the procedure used in the study, what were the findings, and what are some of the issues raised by these findings?

PROCEDURE

Five hundred psychotherapy sessions (2 patients each for 4 therapists), for an 8-month period, were recorded, and each verbal statement made by either therapist or patient in a sample of 120 sessions were classified, coded along multiple dimensions, and punched into IBM cards and machine processed. More than 40,000 verbal communications of therapist and patient were classified in terms of: Quantity of verbal output, Informational Specificity, Affective Content, Interaction Process Categories, and Role System Categories (Table 1).

TABLE 1

CATEGORIES USED IN DATA ANALYSIS

Units of Quantity :

- (1) Proposition
- (2) Statement
- (3) Exchange

Categories of Informational Specificity :

- (1) Passive encouragement
- (2) Active encouragement
- (3) Limits to subject matter area
- (4) Limits to specific old proposition
- (5) Introduces specific new proposition
- (6) Interpretation
- (7) Limits to specific answer
- (8) Excludes discussion

Grammatical Form of Propositions :

- (1) Declarative
- (2) Imperative
- (3) Interrogatory

Affective Content of Propositions :

- (1) Expresses or refers to feelings, affective
- (2) Does not refer to feelings, non-affective
- (3) Affective content indeterminable

Interaction Process Categories :

- (1) Descriptive
- (2) Evaluative
- (3) Prescriptive

Role System Reference Categories :

- (1) Primary System Information
- (2) Secondary System
- (3) Tertiary System
- (4) The Self

Although the 4 therapists participating in the study consider themselves as working within a psychoanalytic framework, they differed considerably in type of training, theoretical dynamic orientation, and concepts of technique and personal characteristics. The patients in the sample were referred to therapists on a random basis.

FINDINGS AND IMPLICATIONS

A. Among the most striking findings was that, despite differences in therapist and patient, there were *major similarities* in terms of the way the interaction process unfolded longitudinally. We shall discuss some of these similarities which appear to be of particular interest.

1. We found a decrease over the first 50 sessions of therapy in what we call primary system communications (included in this category are patient and therapist propositions that refer directly to their roles dur-

ing treatment, the process of therapy and to the purposes and goals of therapy). It should be noted that this category does not refer to communication about transference behaviour (Figure 1).

Illustration of Primary System Communication Patient :

I'd like to talk about this but don't suppose it's important.

Therapist : Talk about it anyway even though you think it's unimportant.

Similarly, therapist communications classified as providing orientation (giving of clarification, confirmation) decrease over the first sessions of therapy for all 8 therapists.

The decrease in communication about the primary role system occurs for our study group as a whole and appears as a trend in every one of the 8 therapist-patient pairs. This decrease in primary system communi-

cation as well as the decrease in therapist orientation communication reflects the inevitability of socialization as a consequence of psychotherapy, irrespective of the ideology and skill of the therapist and the psychological problem of the patient. To resolve the problem of what a patient may expect in his role as a patient and what may be expected of him in this role appears to be a requisite for the maintaining of the therapy system.

2. We also found an increase in communications dealing with affect (included in this category are therapist and patient statements referring to feelings).

Illustration of Affective Communication

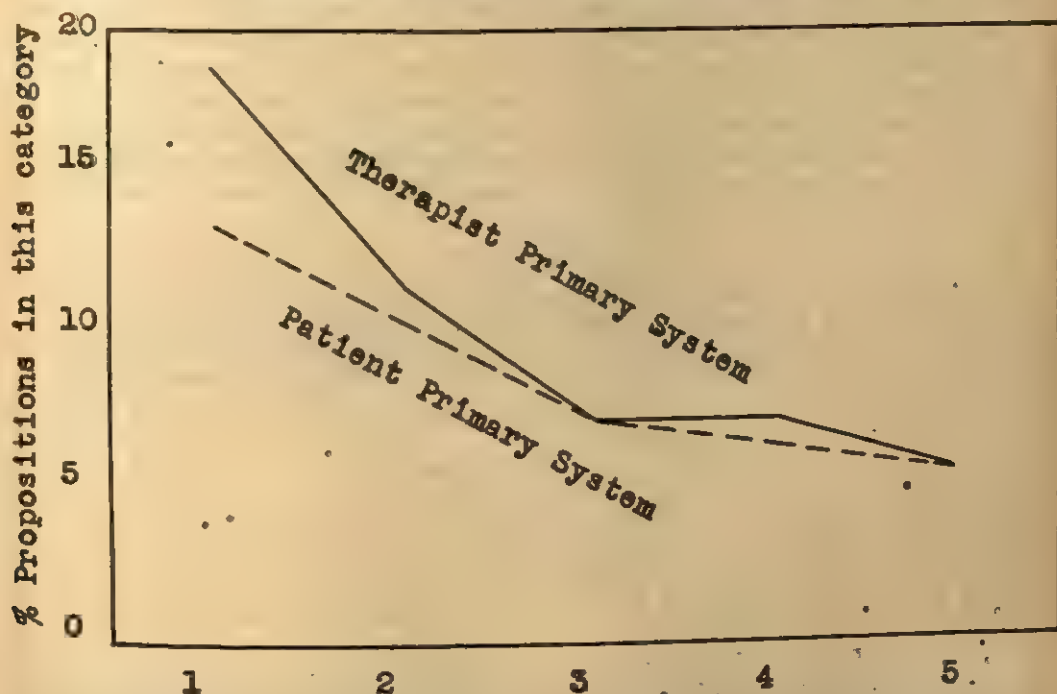
Patient : I felt very angry.

Therapist : You felt sad?

As therapy proceeded, the therapists increased the frequency with which they inquired into and solicited patient verbaliza-

FIGURE 1

PATTERNS OF TEMPORAL DIFFERENTIATION OVER 50 SESSIONS OF THERAPY :
THERAPIST AND PATIENT PRIMARY SYSTEM PROPOSITIONS



Sub-periods within the first 50 sessions are : (1) sessions 1-3 ; (2) sessions 4-6 ; (3) sessions 7-8 ; (4) sessions from the third and fourth months of therapy ; and (5) sessions from the fourth through the seventh months of therapy.

n = 101 sessions or 9,282 therapist propositions and 32,231 patient propositions.

tions about feelings and also, patients began to verbalize more about feelings (Figure 2).

The inverse movement of primary system communications and affective communication over time is *not incidental* to but derives from the very nature of the therapeutic task. Precisely, one of the things the patient learns about his role as a patient is to put his thoughts and especially his feelings into words. The freeing of affect is one of the goals of the therapy.

3. We found increasing similarity of patient and therapist behaviour over time with respect to 3 dimensions of communication, *i.e.*, primary system communications, evaluative communication and affective communication. We are using the term "similarity" to refer to the increasing *correlation* over time between specific kinds of patient and therapist communications. For example, while the correlation between percentage of therapist and patient affective propositions is .23 for the first two sessions, this correlation increases to .70 by the third and fourth month of psychotherapy.

This latter finding raises an interesting question. The data show that during therapy there is a growing similarity in verbal behaviour between therapist and patient, *i.e.*, they become more alike in terms of the categories of verbal expression they employ to describe their thoughts, feelings, and action. The theoretical implications this

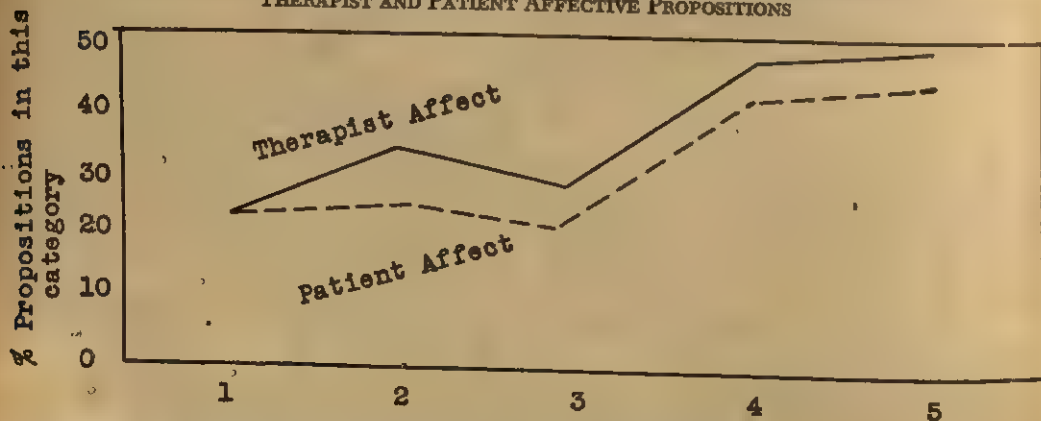
finding raises is whether a growing similarity in the verbal formulation of experience *also implies* a growing similarity in more lasting and deeper aspects, such as: patient perception of experience and patient value system.

The problem of defining the extent of the therapist's influence upon the patient is an important and complex one. While the clinician has always suspected that he exerts some measure of influence on his patient's perception of the world, his attitudes and values, direct documentation of this process has been lacking. Our research supplies some information of how this occurs, but leaves many problems still unresolved. Further work, then, on specifying the relationship between perceptions and values, on the one hand, and verbal articulation of feelings and thoughts, on the other, is required.

What are the implications of such evident similarities in the behaviour of different therapist-patient pairs for our understanding of the therapeutic process? So far, clinicians have been mainly concerned with the effectiveness of different psychodynamic frames of reference in achieving therapeutic results. Since the research revealed large areas of similarity in the unfolding of therapist-patient interaction, we are now raising the question as to what "therapeutic" goals may be served by behavioural processes occurring *consistently* in the therapist-patient pairs studied.

FIGURE 2

* PATTERNS OF TEMPORAL DIFFERENTIATION OVER 50 SESSIONS OF THERAPY :
THERAPIST AND PATIENT AFFECTIVE PROPOSITIONS



n = 101 sessions or 9,282 therapist propositions and 32,231 patient propositions.

* See Fig. 1 for specification of the 5 sub-periods.

We shall not discuss factors ordinarily mentioned in connection with the similarity issue, such as catharsis, the therapist as sympathetic listener and friend, *etc.* We are specifically concerned with the therapeutic implications of the kinds of similarities found in *our* data.

These appear to grow partly out of the uniform requirements for patients in psychotherapy to articulate their feelings and thoughts. We believe that Sullivan's statement to the effect that "one has information about one's experiences only to the extent that one has tended to communicate it to another" contains a measure of truth(6).

"Not only do patients learn to articulate feelings and thoughts in words, but also they learn to express them increasingly in particular language categories such as evaluative and affective communication. During the first 6 sessions the therapist employs a higher proportion of statements dealing with affect than the patient. Both therapist and patient increase their communications dealing with affect in the course of therapy, but the therapist consistently stays somewhat ahead in his usage of this kind of communication.

One consequence of this increase in affective communication for the patient might be to concretize and put him in touch with his feelings, so that he can achieve more harmony between feelings and behaviour. A therapeutic consequence of the patient's learning to employ evaluative statements in his description of self and inter-personal relationships may be to provide him with a sense of explanation and control.

The implication of similarity in occurrence of patient role learning during therapy, as evidenced by consistent decreases in pri-

mary system discussion for all therapist-patient pairs, appears to be the following:

The patient learns that adequate functioning in the patient role requires him and the therapist to discuss their mutual expectations and obligations. This frame of reference applied to his relationships outside of therapy enables the patient to perceive more clearly one aspect of interpersonal strain, *i.e.*, expectational disequilibrium (for example, he becomes aware of non-fulfillment of expectations in his marital relationship as one source of difficulty).

B. A second set of consistent findings of interest, deal with system strain in therapy and tendencies toward reestablishing of system equilibrium.

1. We found that disequilibrium or strain occurring within *one* session affected the structure of communication occurring within the subsequent session. For example, we considered a large number of silences in a session to reflect communicational strain. Sessions with the most silences were followed by sessions with a higher percentage of therapist evaluative and informationally specific statements. That means that therapists become more active, concrete, and interpretative in sessions following high silence sessions (Table 2).

2. Within the span of a single session, too, there occur self-adjusting processes which serve to preserve the continued flow of communication. We found a systematic relationship between therapist and patient output for given time spans. Low structured therapist behaviour, that is, non-specific remarks on the part of the therapist (such as "well" or "go ahead" or "tell me about this experience"), in general tend to be followed by a high patient output (lengthy

TABLE 2
THERAPIST EVALUATIVE PROPOSITIONS IN SESSIONS FOLLOWING HIGH AND LOW
SILENCE SESSIONS

Number of Silences in Session	Proportion of Therapist Evaluative Propositions in the Next Session								All Therapists
	Therapist A	Therapist B		Therapist C		Therapist D			
	Patient	Patient		Patient		Patient			
	1	1	2	1	2	1	2		
High	.19	.52	.38	.24	.19	.25	.34	.29	
Low	.18	.40	.28	.09	.14	.12	.31	.22	

n = 64 sessions.

patient verbalizations). Highly structured therapist behaviour, on the other hand (for instance, specific questions), tend to be followed by medium patient output (defined as more limited verbalization). When communication breaks down, however, as indicated by low verbal patient output or patient silences, then highly structured therapist statements follow. Apparently, then, special measures are needed to get communication moving again. In other words, therapists feed more information into the system when patient output falls and less information into the system when patient output is high.

3. Utilizing our questionnaire data we found that communication in sessions in which therapists were more active was rated as more satisfactory than sessions in which therapists were less active. Therapist activity was defined in terms of quantitative as well as qualitative aspects of communication. Active therapists talked more, more often, made proportionately more affective and informationally specific statements.

During sessions in which therapists are less active, patients expressed more dissatisfaction with the therapy interaction. Patients of the two therapists who consistently were less active broke a greater number of appointments than did the patients of the two more active therapists.

Thus, lack of therapists' activity was found to be related to heightened system strain as reflected in expressions of frustration and dissatisfaction both within the session as well as in patient ratings of particular sessions on questionnaires.

The lack of satisfaction with sessions in which therapists are less active is accounted for by the fact that during those sessions, patients' expectations and hopes are disappointed. Verbal output on the part of the therapist may be interpreted as a "gift from the therapist." Therapist activity and lack of participation may be equated by the patient with rejection, abandonment, and reacted to with frustration. When therapist and patient expectational discrepancy is too great, therapy—as we found—may be terminated.

What are some issues of clinical interest

arising out of these findings about system strain and regulating processes?

We find evidence that the greater the system strain, *i.e.*, divergence in expectation and patient frustration, the more is dissatisfaction overtly felt by the patient; if the strain increases beyond a certain point, the system is interrupted, *i.e.*, the patient quits treatment.

The question is, what is the relation, if any, between system strain, or inversely, the maintenance of smooth flow of communication in therapy and accomplishment of *therapeutic goals*. This is most complex. Maintaining the system, *i.e.*, doing what is good for the system, is not necessarily synonymous with fulfilling the therapeutic task, *i.e.*, doing what is good for the patient. There is considerable evidence for the view that the differences in patient and therapist expectations are used by therapists to advance treatment. In his reaction to the frustration, patient's motivational processes are revealed and his emotions are expressed. These differences become the very subject matter of analytic interpretation. Eliminating "strain" from therapy would be eliminating an essential element of treatment. Giving in to patients' transference expectations, would mean giving up of the therapeutic task. In other words, the system might be restored at the expense of therapeutic goals. It is well known that patient's overt satisfaction with an hour is not always synonymous with an evaluation of the therapeutic effectiveness of that hour. On the other hand, excessive strain, frustrations, a lack of taking account of patient expectations can be harmful to therapeutic goals. The reaction stirred up in the patient may be so overwhelming that he is unable to deal with them and communication is unnecessarily and increasingly interfered with. If the expectations are too divergent, *i.e.*, the system strain is too great, the system is interrupted, *i.e.*, therapy is discontinued by the patient. Obviously, the therapist can be of no help to the patient if this happens since therapy cannot be conducted without the patient's presence. However, this does not mean an indication that the system must be maintained at all costs. Some people could be and, perhaps, are kept in therapy, *i.e.*, the system maintained by acceding to pa-

tient's self-damaging demands, at the cost of some or all therapeutic goals. This would be of little help to the patient, but may provide him with a false sense of accomplishment.

Therapeutically useful system strain is a delicate balance between the demands of system maintenance, patient satisfaction, and optimal quantity of patient frustration. Too much sensitivity to system strain on the part of the therapist might endanger important therapeutic goals, while too little interferes with the development of a potentially useful therapist-patient relationship.

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CLINICAL PROFILES OF PAID NORMAL SUBJECTS VOLUNTEERING FOR HALLUCINOGEN DRUG STUDIES¹

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The role of the "normal control" volunteer in current psychiatric research is a crucial one. Many basic psychopharmacological problems have been explored by means of the study of volunteer subjects. The assumption implicit in these studies has been that the volunteers were "healthy." The results with these groups were then compared with the "sick" groups and conclusions drawn on the basis of the differences between them. But an individual's decision to volunteer for a research study may be indicative of personality deviation or psychopathology in varying degrees. This can result in psychologically unrepresentative samples, and conclusions based on such studies applied to the general population must be carefully evaluated. Lasagna and von Felsinger(2), on the basis of psychological tests given to a group of student volunteers participating in drug response studies documented a higher incidence of psychopathology than might be expected in a randomized selection of an undergraduate population. Pollin and Perlin(7), in a clinical study at the National Institute of Mental Health, demonstrated a high incidence of "significant psychopathology" in volunteers. Brower(1), Maslow(3), Maslow and Sakoda(4) and Riggs and Kaess(6), using a wide range of psychologic and psychomotor techniques claimed significant differences between volunteer and non-volunteer groups.

Our study dealt with clinical psychiatric evaluations of 56 subjects volunteering for hallucinogen studies at the New York State Psychiatric Institute from 1956 to 1959. Our focus in this work was on motivations for volunteering, incidence and types of psy-

chopathology, relationship between psychopathology and motivations, and personality patterns.

MATERIAL AND METHOD

The sample was composed of 46 males and 10 females ranging in age from 21 to 38 with a median age of 23.4, with varying occupations but a high preponderance of students (Figure 1). All subjects had some

FIGURE 1
Occupations of Volunteers

Occupation	Total Male	Number Female
Medical Students	33	3
Graduate Students	4	2
Undergraduate Students	4	1
Secretaries	—	3
Actors	1	1
Engineers	2	—
Writers	1	—
No Occupation	1	—
TOTAL SAMPLE	46	10

college and 46 had varying degrees of post-graduate training. Volunteers were recruited by posting an announcement on the bulletin boards of a university medical school and a university undergraduate school (Figure 2). A few recruits were obtained

FIGURE 2
WANTED

Volunteers. Between 21 and 30 in good physical health for special medication studies involving temporary alterations in perceptions. Subjects should be prepared to sleep in the hospital overnight. Fee \$25.

For further information and screening interview call Dr. Malitz, N. Y. State Psychiatric Institute, LO 8-4000, Ext. 96.

through recommendations of their friends who had participated in a study.

All volunteers received an initial 1 hour psychiatric screening interview. The interview was a semi-structured one, with suf-

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ficient latitude given so that spontaneous material could emerge. Specific areas such as personal and family history, motivation, over-all life adaptation and symptoms were covered. Subjects who demonstrated acute neurotic or psychotic symptomatology were excluded from the hallucinogen study. Those accepted received oral doses of LSD-25 or one of its derivatives, psilocybin or placebo. They were paid \$25 for participation in the study. Each subject received from 1 to 3 follow-up interviews lasting approximately 45 minutes on separate days beginning 24 hours after the study. These interviews focused mainly on subjective reactions to the drug experience, but in certain instances pertinent psychodynamic factors became apparent. This was true particularly in instances where the drug had stimulated the uncovering of repressed material or where post-drug reactions of anxiety, depression or somatic reactions had developed.

Forty of the original 56 volunteers received 30 to 60 minute follow-up interviews from 6 months to 4 years after the initial screening interview. An attempt was made to contact all the original volunteers. Some had moved out of town, others had moved and left no forwarding address. An additional fee of \$5 was offered as incentive to return for the follow-up interview. Further material was obtained about life adaptation from these follow-ups since the study, and motivation for volunteering was reviewed retrospectively over an extended time interval. Data from all interviews were then independently evaluated by the initial interviewer and 2 other psychiatrists. Two of the raters were Board certified psychiatrists, the third was Board eligible. In addition, one of the 3 was a graduate of an analytic institute and the other 2 were in analytic training. Clinical psychiatric diagnoses were made where indicated and personality patterns were delineated. In addition, each volunteer was evaluated as to whether or not in the opinion of each therapist, he needed psychiatric treatment.

RESULTS

A. Motivations: Motivations for volunteering were frequently quite complex and could be seen as operating simultaneously

on 2 levels. Consciously stated motivations on one level; pre-conscious and unconscious ones on another. In only certain instances did we feel that we could determine the pre-conscious and unconscious roots. We felt that the subjects' conscious motivations could generally be broken down into the following broad categories: 1. Financial need; 2. Scientific interest and curiosity; 3. Seeking new experiences (adventure); 4. Indirect seeking of psychiatric help; 5. Symptomatic relief from tension, depression or anhedonia; 6. Searching for insights into personal problems; 7. Desires for status or prestige; 8. Employing the study as a vehicle for the expression of socially unacceptable impulses; and 9. Hope of stimulating creativity through drug induced perceptions. The following brief examples will serve to illustrate some of these categories:

1. *Seeking relief from anhedonia:* A 21-year-old single male undergraduate volunteer majoring in physics described obsessive fears of dying and of pointed instruments piercing his eyes. He was undergoing a classical analysis 5 times a week at the time of volunteering. He openly expressed his feelings of boredom and anhedonia as follows: "I'm bored by nearly everything in life. I'm looking for new forms of excitement. The only reason I don't take heroin is that it's addicting. One of the happiest days of my life was the day I took mescaline." This subject was not accepted for drug studies. He revealed in a follow-up interview that he had begun to take mescaline regularly. It seems clear that he consciously sought relief from anhedonia through means of the anticipated "pharmacogenic pleasure effect" (5) of the drug.

2. *Seeking relief from tension:* A 20-year-old single male with symptoms of chronic tension, potency difficulties, alcoholism and bronchial asthma had participated as a volunteer in our studies on 5 separate occasions. He revealed that as a result of the first study he had become aware of "all the pressure I put on myself. I felt while under the drug as if a great weight had been lifted from my shoulders. I felt for the first time really at peace with the world." His repeated acts of volunteering seemed to be in part conscious attempts to reproduce the symptomatic relief he had both anticipated and experienced during his initial contact with the drug.

3. *Indirect seeking of psychiatric help:* A 22-year-old married female with highly com-

petitive strivings toward masculine figures volunteered for the study with the consciously stated motivation of "being interested only in the money." She had a good deal of suppressed and repressed rage toward female authority figures stemming dynamically from an unresolved conflict with a controlling, domineering mother. She developed a post-drug reaction of mild depression, anxiety, and irritability, with obsessive angry ruminations about her mother-in-law. She was seen by one of us for 5 psychotherapeutic sessions, and during the third session spontaneously stated that she was able to recognize that in volunteering she had been looking for some psychiatric help to aid her in solving her marital problems. As a result of the drug experience she felt that she "got not only what I was looking for, but much more than I bargained for." The subject was referred for private treatment and is now receiving psychotherapy.

4. *Seeking new experiences (adventure)*: A 38-year-old schizoid bachelor poignantly expressed his feelings of disappointment in his search to alleviate the isolation of his daily living as follows: "I somehow feel that I missed out on many things in my life. I was never in the service because of my deafness and I've tried to make up for this by traveling. But I've felt a further need for such experiences and the drug seemed to be able to supply this to me."

5. *Desires for status and prestige*: A 27-year-old oriental student married to a white woman had sought for identification with whites throughout his life. He attempted to deny his own racial origins and tended to think of himself as white. He felt that he had gained prestige through participating in the study because "very few people have gone through this and I am in good company—people like Aldous Huxley." Huxley was much admired by this subject.

6. *Employing the study as a vehicle for the expression of socially unacceptable impulses*: A 23-year-old obsessive, over-controlled student with symptoms of sexual inhibition and recurrent gastrointestinal complaints retrospectively stated his expectancy of the study as follows: "I felt that for me the study might be an uninhibited experience where I could let myself go and express myself in an emotional way; maybe grab one of the nurses. You know how rationally I approach everything." It seems evident that the drug experience represented a solution to problems of neurotic inhibition. The subject anticipated the drug effects and the milieu of the study as a situation in which he might loosen controls and act out sexual impulses in a permissive non-punitive setting.

An example of pre-conscious and unconscious determinants can be illustrated by the following:

A 23-year-old male art student had entered psychotherapy because of phobic and obsessive symptoms, under coercion from his parents. He showed a characteristic pattern of defiant, provocative and self-destructive acting out toward male authority figures. This related to unresolved conflict with a perfectionistic, demanding father who insisted on superior academic achievement. The subject had consulted his therapist prior to volunteering, but had been discouraged by him from participating. A power struggle then ensued over this issue. When the patient insisted on going through with the study his therapist attempted to prohibit this activity by threatening to discontinue therapy. In the face of the patient's adamant refusal to accept this limitation, the therapist capitulated, in order to prevent a complete breakdown of therapy. By using volunteering as a means of acting out, this subject was unconsciously attempting to defy authority in a transference repetition of an earlier childhood behavior pattern.

B. *Psychopathology*: Diagnoses were made on 26 subjects. Twenty-three of these 26 subjects were evaluated as "needing psychiatric treatment" (Figure 3). The degree

FIGURE 3
Diagnostic Categories and Consensus of Need
for Psychiatric Treatment

	Total	No. Needing Treatment
Mixed Neurotic Reactions		
(Anxiety and Depression)	3	3
Neurotic Character Disorders	10	8
Personality Disorders		
(Schizoid Personality)	7	6
Psychophysiological Reactions	2	2
a. Respiratory Type	1	
b. Gastrointestinal Type	1	
Schizophrenic Reactions	4	4
a. Chronic Undifferentiated Type	2	
b. Paranoid Type	1	
c. Pseudoneurotic Type	1	
TOTAL	26	23

of concordance between the evaluating psychiatrists in their estimations of psychopathology was quite high (Figures 4 and 5). One indication of the degree of psychopathology in the group was the relatively large number of volunteers exposed to psy-

FIGURE 4
Degree of Agreement on
Diagnostic Categories

Degree of Agreement	Number of Diagnoses Agreed Upon			
	Chance Expectation	Actual Results	Percentage Chance	Actual Results
3 out of 3	0	41	1%	60%
2 out of 3	14	24	20%	35%
0 out of 3	54	3	80%	5%

Total Diagnoses Made—68 *

* Because of more than one diagnosis in several subjects, the number of diagnoses made exceeds the total number of subjects.

FIGURE 5
Degree of Agreement Among Raters
on Need for Psychiatric Treatment

Degree of Agreement	Need for Psychiatric Treatment			
	Chance Expectation	Actual Results	Percentage Chance	Actual Results
3 out of 3	14	41	25%	73%
2 out of 3	42	15	75%	27%
	56	56	100%	100%

FIGURE 6
Treatment Background

History of Prior Treatment	2
In Treatment at the Time of Volunteering	6
Entered Treatment Following Volunteering	4
TOTAL	12

chiatric treatment. Twelve subjects either had a history of previous treatment, were in treatment, or entered treatment after volunteering (Figure 6). The occurrence of symptoms was tabulated for each volunteer (Figure 7).

C. Relationship between Motivation and Psychopathology: The group of subjects with better life adaptations were motivated mainly by financial need, scientific interest and curiosity, or combinations of these. Subjects with significant psychopathology tended frequently to volunteer for reasons related to maladaptive patterns. They often perceived drug effect and the milieu of the study as having a problem solving function. Some saw the study as a means of making contact with psychiatrists; others as fulfilling frustrated needs for excitement and adventure. Those with symptoms of anxiety, depression or anhedonia sought magical relief from these painful feelings. Some subjects hoped to undergo transcendental experiences. Inhibited, repressed subjects fantasied being able to act out forbidden impulses. Subjects with high addictive

FIGURE 7
Inventory of Symptoms

Symptoms	Total Number of Volunteers
Sexual Inhibition	16
Schizoid Tendencies	14
Psychosomatic	13
Allergies	4
Dermatitis	3
Asthma	3
Gastric Dysfunction	2
Obesity	1
Anxiety	10
Depression	9
Drug Usage	6
Marijuana	3
Mescaline	3
Anhedonia	4
Homosexuality	3
Overt	1
Pseudohomosexual	1
Latent	1
Phobias	3
Compulsions	2
Excessive Alcohol Intake	2
Obsessions	1
Conversion Symptoms	1
Sado-masochistic Acting Out	1
Masochistic Fantasies	1
Paranoid Ideation	1

potentials looked forward to the "pharmacogenic pleasure effect" (5) of the drug. Several of these subjects reported using mescaline regularly and deriving from it incomparable feelings of excitement and enjoyment.

D. Personality Patterns: Personality patterns covered a wide range which included hysterical, obsessional and schizoid types. The latter 2 categories predominated. A variety of adaptive defenses were utilized by different individuals in coping with drug-induced stress. In addition, there was considerable variation in the degree of ego disorganization induced by the drug. A study is now in progress attempting to correlate the total behavioral response pattern to hallucinogens with personality variables.

DISCUSSION

Although diagnostic categories are admittedly rough estimations of psychopathology they can be exceedingly useful. On the basis of our clinical impressions the prevalence of psychopathology in the volunteer group seemed quite high. Psychiatric diagnoses were made on almost 50% of the group. More than one third of the group

were rated as "needing psychiatric treatment," and one fifth of the group were or had been in psychiatric treatment. These results are similar to the incidence of psychopathology reported in Lasagna's study (48%) and in Pollin and Perlin's work (52%). Our findings re-emphasize the need for detailed psychological study and careful screening of volunteers for psychiatric research. In some instances psychopathology not uncovered in the initial screening interviews, was revealed in follow-up. Subjects tended to be less guarded and more revealing of emotional difficulties in follow-up interviews. Removal of the competitive pressure for selection may have made some subjects less reluctant to expose themselves. In some instances we observed the development of a strong positive transference towards the experimenter as a result of his close contact with the subject during the stressful hallucinogen experience. This also may have facilitated the elucidation of further data in the follow-up interviews. In addition, the extended time span between the initial and follow-up interview, in some instances up to 4 years, permitted us to scrutinize a broad segment of the subject's life adaptation. In several instances we learned of subsequent decompensation and the initiation of psychiatric treatment. All of these factors underscore the methodological value of follow-up interviews in such a study.

Our volunteer sample was homogenous only in respect to the uniformly high social, cultural and educational level of the group. In terms of psychopathology and motivation 2 sub-groups can be differentiated. One group was composed of subjects with healthy life adaptations motivated primarily by financial and scientific reasons. The second was made up of individuals with varying degrees and types of psychopathology motivated by reasons frequently related to their psychopathology. Within these sub-groups there existed considerable differences in personality structure, defense mechanisms and means of adapting to stress.

Pollin and Perlin(7) found in their series, that the greater the social stimulus to volunteer, the less was the degree of psychopathology present. Our results confirm this find-

ing. Medical students live in a milieu which encourages volunteering for scientific studies. Over 2/3 of our medical student volunteers were classified in the group with the most successful life adaptations. On the other hand, only 1/4 of our volunteers in all other occupations were placed in this category while 3/4 were classified in the group with psychiatric diagnoses. This difference is statistically significant beyond the .01 level of confidence.

Popular literature on hallucinogens is replete with references to mystical sensations experienced in an atmosphere of splendid isolation. These romanticized accounts may have attracted the large number of schizoid individuals identified in our sample. Tending to handle life situations in an introspective autistic manner, these subjects may have expected sensations which as one volunteer commented, "would take me out of this world."

The high incidence of obsessional traits may bear a direct relationship to the large proportion of medical students in the sample. It is known that professional men such as lawyers, doctors and engineers number a high percentage of obsessional character types among their ranks. Since medical students are in professional training, they have similar character traits and this fact may have weighted our sample heavily in that direction.

The surprising high degree of concordance in the diagnoses and evaluation of need for treatment among the 3 psychiatrist raters may be explained on the basis of 2 factors. One was the similarity of their psychiatric training and experience; the second was a tendency to share similar viewpoints and attitudes toward diagnosis and treatment based on working closely together over a period of several years.

SUMMARY

1. Psychiatric evaluations were made of 56 volunteers for hallucinogen studies. Diagnoses were made on 46% of the group. Forty-one percent were estimated as needing psychiatric treatment. Twenty percent of these had received some form of psychiatric treatment.

2. Those subjects with the more effective life adaptations were motivated to volun-

teer mainly for financial and scientific reasons. Those with diagnosed psychopathology tended to volunteer for other reasons frequently related to their maladaptive patterns.

3. The greater the social stimulus to volunteer, the less was the degree of psychopathology present.

4. Follow-up interviews frequently revealed psychopathology not ascertained in initial screening interviews. The removal of competitive pressure for selection, the development of positive transferences to the investigators through the hallucinogen experience and the broad time span covered by the follow-ups might explain this.

5. Personality patterns covered a wide range with obsessional and schizoid types predominating.

6. There was a high degree of agreement among the 3 rating psychiatrists regarding

diagnosis and need for treatment. The raters had similar training and experience. They had worked closely together for several years, developing a similar "philosophy" of psychiatry. These factors may have contributed to the high concordance.

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NEW INTERDISCIPLINARY TRENDS IN PSYCHIATRY¹

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One of the most fashionable, most discussed subjects in the total field of science today is that of the "interdisciplinary approach." By this is meant the joint application of more than one type of scientific thinking to the solution of a common problem. Partly, this trend is a revolt against the tendency in recent years for the various scientific disciplines to have become excessively narrow and specialized. Partly, also, it is a recognition of the greater complexity of today's scientific problems. Above all, it reflects a healthy interest in finding ways to solve the "whole" or "total" problems of mankind in contrast to the more traditional interest of science in studying the "parts" or "fragments" of human problems.

Psychiatry has a very unique role in this new trend, having led the way in introducing the concept of the interdisciplinary approach. It was first developed during World War II when military psychiatry evolved the concept of the "team," made up of a number of different disciplines as a way of meeting a tremendous demand for psychiatric services in the face of very limited manpower resources. Perhaps even more important, though, is the fact that the study of psychiatry stands in a very strategic position in the total field of science by virtue of having one foot planted firmly in the biological sciences, and the other in the social or, behavioral sciences. Perhaps no other discipline is presented with such unique opportunities as is psychiatry in bringing about a comprehensive understanding of man from a knowledge of both man's biology and his humanity. Nearly all other fields of science specialize in one or the other aspect of human existence, but psychiatry is in a position to study and understand both of them together. For this reason, it is most urgently recommended that psychiatry assume a dynamic leadership in the further development and refinement of the "interdisciplinary" concept. In

particular, it would be appropriate for psychiatry to assume the initiative in the fields of medical education, in scientific research, and in social planning wherein it is expedient that proper recognition be given to both the biological and the human side of man.

In addition to psychiatry's fairly long experience in dealing with the problems associated with the interdisciplinary treatment of patients, involving the joint efforts of psychiatrists, social workers and psychologists, a new type of problem is now developing in relation to other disciplines. In this area, psychiatry has not been the one to lead the way, and it is possible that we might suffer as a consequence. The following is an attempt to highlight some of the ways in which psychiatry has failed, perhaps, to make its message clear, a default which is helping other disciplines to build up erroneous programs based on incorrect assumptions. It would seem to be the responsibility of psychiatry to correct these misconceptions.

PUBLIC HEALTH AND MENTAL HEALTH

The new type of "interdisciplinary" approach referred to is the one in which public health people, particularly, have recently come to take an interest. It is sometimes termed the "epidemiological study of mental illness." Those who make these studies tend to take at face value the data produced by some of us psychiatrists, and may not be aware of some of the important contradictions inherent in them. The public health professions are increasingly aware that psychiatric disabilities constitute one of our largest public health problems today, an awareness which we must encourage. Unfortunately, however, the traditional methods of doing epidemiological studies are not as applicable in the same literal way to mental health as they are to the study of such conditions as typhoid or TB, for example.

To begin with we suggest that the term "mental illness," itself, is merely an euphemism. The application of the term "illness"

¹ Read at the 116th annual meeting of the American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

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to psychiatric problems has come about mostly because the study of these problems has come under the province of medicine, and not because there exists a state of "illness" which is comparable to the pathological states seen elsewhere in medicine. The institutions in which people with psychiatric problems are cared for have recently come to be known as "hospitals" chiefly because physicians work in them and usually exercise administrative control over them, and not because they have been designed to offer a unique clinical service. These euphemisms are characteristic of physicians, and it is safe to predict that when administrative control of any institution falls into the hands of physicians, it will become known as a "hospital," and the people who are being serviced will become known as "patients." For example, institutions for the mentally retarded are changed from "schools" to "hospitals" by the simple process of changing the administration from one professional field to another. The individuals who are cared for in "mental hospitals" are not segregated from society by virtue of their having an "illness," although this is the common assumption, but, instead, it is because of the fact that they have exhibited a type of behavior which society finds unacceptable.

The conditions which are commonly classified under the category of "mental illness" are frequently subjected to statistical investigation by public health people. In doing so, they tend to assume that they are dealing with phenomena comparable to typhoid or malaria, and apply similar statistical methods to their studies. Because these assumptions are incorrect, there is a growing number of misleading reports coming out under the general category of "epidemiology of mental illness." A case in point is a recent publication of the Senate Subcommittee on Reorganization and Internal Organization on the subject of "Patterns of Incidence of Certain Diseases Throughout the World." The citing of this publication is important because its data are likely to provide the background material for the establishment of an "International Health Institute," and any errors in it may become expressed in the form of legislation which could easily lead to a

considerable waste of money and manpower.

Under the section entitled "Mental Illness," this publication draws appropriate attention to the international scope of the problem of psychiatric disorder, and the conventional plea is made that "There is great need for research on an international level in the field of mental illness and mental health." It is mentioned that there exists a state of "unsatisfactory knowledge regarding the etiology and epidemiology of mental disorders" (which is not true in the sense in which it was intended), and reference is made to the logical source of data as being "hospital records" from which "the prevalence and incidence of mental health" can presumably be derived. It further points out that

the basic ideas to be resolved before comparisons (among different countries) are possible are: (a) agreement about what constitutes a case of specific type of mental disorder, (b) development of standardized case-finding methods for detecting cases in the various population groups and standardized methods of classification, (c) devising standardized methods for measuring duration of illness and for characterizing the psychological status, the degree of psychiatric disability, social and familial adjustment, and physical condition at various intervals following onset of disease.

Further on, reference is made to the "need" to study "genetic and prenatal factors."

These references made to the Senate Subcommittee's report, much of which echoes similar ones emanating from the World Health Organization are cited to illustrate the kind of assumptions made by many public health people about "mental illness." The errors are certainly not those of the public health specialists, but of the arbitrary administrative practices of psychiatrists who have created the records from which these assumptions have been made. Not all psychiatrists view "mental illness" in this way, but there are some, particularly in the public mental health field, who employ a language similar to that with which statisticians and epidemiologists are familiar, and their reports are taken at face value. These psychiatrists speak of concepts such as "illness," "case finding," "incidence,"

"etiology," "epidemiology," "physical condition," "frequency," "diagnostic classifications," "clinical manifestations," "hospital records," "genetics" and "pre-natal influences" in such a way as to imply that psychiatric disorders are comparable to infectious diseases. The expectation lying behind "epidemiological" investigations of both sorts is that of finding some "etiological agent" or "mode of transmission," with the assumption that it will be found in some germ, vector, nutritional factor, or in genetics.

There is another way of looking at the phenomena of psychiatric disorders which make very inappropriate the assumptions outlined above. This point-of-view sees psychiatric problems as being man-made rather than biologically determined, and as such are comparable to studies of such man-made phenomena as art, literature, government and crime and not comparable to studies of biologically determined problems, such as malaria, vitamin deficiencies or cancer. From this viewpoint, the "incidence" of mental illness would be studied in much the same way that we would study the "incidence" of communism, or lynchings, or murders, or poverty or illiteracy. Likewise, the "etiology" of the former will be found from sources similar to that of the latter. Statistics pertaining to both need to be viewed according to similar qualifying conditions.

INTERPRETATION OF MENTAL HEALTH STATISTICS

Much of the public health effort in the field of mental health is directed at studies of the "diagnostic" classifications of mental disorders. The National Institutes of Health are conducting a large-scale program along these lines, and there is a conspicuous absence of a recognition of the true nature of these alleged "diagnoses." Again, "diagnoses" are made in the mental health field only because it happens that physicians make them, and physicians characteristically classify persons according to this concept. To a physician, for example, a healthy, normal person would be classified as: "Diagnosis: No disease." To a certain, well-known pathologist, an ordinary woman is "a constipated biped with a low-back pain."

Actually, the diagnoses used in the field

of psychiatry convey very little useful meaning, and none for which any significant "epidemiological" implications can be derived. A person who is admitted to a mental institution, for example, is most likely to be "diagnosed" as some sort of psychosis because this justifies the deprivation of human rights which is incident to admission to a mental hospital. Similarly, people about whom a decision is made to *not* admit them to a mental hospital are seldom classified as psychotic because to do so would require an elaborate justification for not making the commitment.

In addition to this general classification, specific "diagnoses" are arrived at, to a large extent, by arbitrary administrative rules and by the varying points of view of different psychiatrists. For example, in some states there exist administrative prohibitions against the admission to state hospitals of problems associated with alcohol. As a result, in those states, the term "alcoholism" seldom appears in any list of hospital patients' diagnoses, although there can be found many examples in those hospitals of patients who, under other circumstances would be listed under "chronic alcoholism" or "alcoholic psychosis." In many places, the most available beds for the care of the social or medical problems associated with aging are the mental hospitals, and in these cases as many as 30-50% of all admissions might be listed as "cerebral arteriosclerosis," "senility," etc. in order to justify the admission, and not because there exists a unique psychiatric disorder requiring care in the mental hospital. It is not uncommon, in a given hospital, for the ratio of "schizophrenia" to "manic-depressive psychosis" to change drastically when a new administrator takes over the direction of the hospital, if he has a different type of diagnostic preference than his predecessor. The difference between the two "diagnoses" is a descriptive one, and one can arrive at one instead of the other according to which features of a patient one emphasizes.

Another factor of great importance in assessing the reliability of "diagnostic" data in "mental illness" is often unrecognized. In the various states of the U. S. there is a wide range in the number of mental hospital beds per 100,000 population which the

state legislatures are willing to provide money for. This wide range (in the order of 500%) is determined by economic and political forces, and not by public health need. In each state, regardless of the number of beds provided, they are always filled. As a matter of fact, the average bed occupancy rate is over 100%. When investigators seek to learn about the "incidence" of mental disorders in a population by studying the admissions to the public mental hospitals, they only discover the number of patients who get into the hospitals, and not the number of patients who need hospitals. In a state, for example, which previously provided one mental hospital for its people but which subsequently builds a second one, the number and rate of hospitalized patients in the state almost immediately doubles, because of the tendency of new hospitals to become filled very rapidly. This abrupt change obviously does not reflect a doubling of the "incidence" in the population, but rather a doubling of the number of available beds. Because hospital statistics show only the number of beds provided, and not the "incidence" of mental difficulties in the population, we could expect that they would reflect most accurately the level of financial resources of the states. Other countries demonstrate the same correlation. Consistently, the most prosperous countries, states, cities or provinces provide the most extensive psychiatric facilities, which are almost invariably utilized to the saturation point. The fact that psychiatric facilities are utilized to a maximum degree in each instance is a good clue to the fact that the data reflects only the degree of utilization, and not the "incidence."

There also exists a very wide range in what might be called the "psychiatric sophistication" of various populations. In some areas people have learned to look upon "psychiatry" with a much greater degree of sophistication than in other areas. People in such cities as New York, Boston, Washington and Topeka, and particularly in the middle class suburban areas of these cities show a high level of this "psychiatric sophistication," chiefly because these areas have become the centers of the greatest concentration of non-institutional psychiatrists.

The proximity of these specialists has resulted through the years in educating the lay population in the commonplace, everyday, use of psychiatric services outside of the institutions. The resulting sense of familiarity produces greater acceptance. In contrast, there are other areas, particularly in the southern and western states (except California), even large cities, where there has not developed a high concentration of non-institutional psychiatrists. As a result, the local public's image of psychiatry is likely to be limited to that portrayed by local mental hospitals. This kind of picture generally makes for fear and prejudice, even in otherwise well-educated populations. In addition, of course, there is a sizable segment of the population which is simply ignorant of the whole subject of psychiatry, and scarcely knows of its existence or purposes. We might, therefore, describe 3 levels of "psychiatric sophistication." The 1st level would characterize population groups who are relatively well-informed about non-institutional psychiatry and likely to accept it as a commonplace medical service. The 2nd class is comprised of those whose experiences have been confined to remote contacts with institutional psychiatry which tends to leave them with substantial prejudices against its use in everyday affairs. The 3rd level is made up of those persons who have had so little experience with any type of psychiatry that they are essentially ignorant of it. There will be found a high degree of correlation between the distribution of these different types of population and the different types of psychiatrists. The 1st class will be found in the region of 10 or so large cities in which non-institutional psychiatrists have become concentrated. The 2nd class will be found mostly in those areas where psychiatry is represented chiefly by the state hospitals. And the 3rd class is found in those areas where psychiatry is almost completely inconspicuous.

The degree of "psychiatric sophistication" in a given population will have a very marked influence on the nature of "mental health statistics." The latter must be interpreted in the light of the former. In those communities where there exists an extensive number of non-institutional psychiatric re-

sources (clinics, general hospital psychiatric services, private psychiatrists), there rapidly develops a high level of "psychiatric sophistication." The resulting acceptance of psychiatry leads to a much greater use of these facilities for the relatively minor, early cases of psychiatric disorder. This trend becomes particularly evident in the use of these facilities for childhood psychiatric problems. In contrast, those communities where the public image is dominated by the public mental hospitals, and the level of sophistication correspondingly low, there is not likely to be a noticeable demand for treatment of these early, relatively uncomplicated problems. Instead, people are unlikely to avail themselves of service until the clinical condition has reached such a serious state that institutionalization appears to be the only available solution. Examination of the "mental health statistics" of these two communities will reveal what appears to be two entirely different "epidemiological" pictures. In the first case, it would appear that there is a much higher "incidence" of childhood psychiatric problems, of neurosis, of early schizophrenia, *etc.* In the other case, we would expect to find psychiatric disorders appearing in the older age groups, and to be predominantly psychosis instead of neurosis. In brief, "psychiatric sophistication" of the population will be one of the variables which contribute to a distortion of the apparent "epidemiological" picture of mental health.

What can we say, then, about the true frequency of mental disorders in a population? Is there a way of making a valid estimate in spite of the unreliability of the data customarily used? The answer is "no," simply because the "incidence" is an arbitrary, social decision, and not one resulting from "cause and effect" phenomena. In contrast, conditions such as typhoid fever are absolute in the sense that a given individual either has or does not have it, thus making it possible to count accurately those who do. Psychiatric disorders, on the other hand are relative and qualitative so that their numbers are determined by social criteria which are essentially unrelated to clinical realities. Any given society decides that there are certain limits of human behavior which are acceptable to that society, and that the in-

dividuals whose behavior falls outside those limits are regarded as unacceptable, or "abnormal." This sort of delimitation means that in any given social group, a certain percentage of its members will fall into the "abnormal" category, and become, therefore, subject to psychiatric, legalistic or economic segregation. The indigent, the criminals, the mentally retarded, as well as the so-called "mentally ill" must be seen as the total number which make up this unacceptable segment. The standards established are determined by many factors, not the least of which is the degree of willingness and ability of the community to support a dependent population. In societies which are willing and able to afford the costs of supporting large numbers of unproductive citizens, there will be a high rate of institutionalization. Other societies which are less able or less willing to pay a high price will institutionalize smaller numbers. The types of institutions among which this segment of dependent people are divided up will be determined by another set of arbitrary factors. Some communities make more extensive provisions for the indigent than they do for psychiatric problems, so that their apparent "incidence" of psychiatric disabilities will appear to be low. The state of Wisconsin is an example of this. Other states, or communities, such as New York, have emphasized the development of mental institutions at the expense of provisions for the indigent, and their apparent "incidence" will appear to be high (500% higher, as a matter of fact). Some southern states are more likely to shunt their unwanted social problems to penal institutions, thus reducing the apparent percentages going into mental hospitals. Washington, D. C. is an example of a community where the arbitrary interpretation of certain laws by a handful of judges and psychiatrists have produced wide fluctuations in the numbers of people going to penal institutions on the one hand, or mental hospitals on the other.

Highly urbanized, the older and more prosperous communities tend to set up stricter standards for what is considered "normal" behavior than do more rural, newer or less prosperous communities. This results in apparent differences in the "incidence of mental illness," as well as differ-

ences in the apparent rates of juvenile delinquency, alcoholism and crime.

Another variable of great importance is the issue of whether social problems come to the attention of public authorities, or are handled privately. Certain groups of people, such as the Chinese, the Mennonites, and the sophisticated upper middle class tend to "take care of their own." Resources within these cultures are used to handle individual problems so that they are not so likely to come to public attention, and thus become part of the "statistics." On the other hand, certain population groups tend to rely very heavily on public resources, and these are most likely to be those whose economic, educational, and living arrangements fail to make room for their unproductive members. These population groups will, therefore, contribute large numbers to the published "statistics."

Still another variable of expanding significance is the proportion of the aged population in a society, the nature of the provisions made for their care, and the attitude of younger people toward assuming responsibility for their older relatives. Communities with a high percentage of aged people, with inadequate provisions for their specialized care, and with prevalent attitudes sanctioning the abandonment of the aged from the homes of the younger tend to contribute large numbers of "cases" to the lists of "mental illness." New York City is an example of these combined factors. There, nearly 50% of admissions to local state hospitals are people over 65, even though only 11% of the population is in this age group. In contrast, England and the Scandinavian countries have a much higher percentage of aged people in the population, but a much lower proportion of aged in the mental hospital admissions, both being in the order of 12-14%. These countries have made better provision for the non-hospital care of their aged, and their younger people are less disposed to abandon aged relatives. These two sets of social attitudes and practices make for very wide differences in the apparent "incidence" of mental disorders in the two cultures, introducing a possible error of as much as 300-400% if statistics are taken at face value.

SUMMARY

The actual way in which our "mental health statistics" came to be what they are is not through the process of "detecting" a certain number of "cases" in a population as a result of "hospitalization." Instead, the figures which are published are reflections of many variables determined by different and complex social attitudes and socio-economic practices. The most significant factor which is revealed by mental health figures is the degree of hospital utilization, and not hospital need.

The remarkable successes which the public health people have achieved in the past in conquering many of our major health problems have left them with the time and resources to tackle new problems. They are now shifting their interest to the mental health field, and therefore represent one of psychiatry's most important potential allies. It behooves psychiatry to join forces with them. The new interdisciplinary frontier which is opening up, places on psychiatry's shoulders the responsibility of clarifying some of the misconceptions which are current. The true meaning of "mental health statistics" is one which only psychiatrists can interpret correctly. Like so much of what we say and write in psychiatric circles, they should not be taken at face value. The remarks made in this paper are designed to point the way toward a clarification of some of the contradictions which may not be apparent to public health workers.

It is only fair to point out, however, that within the field of psychiatry there exists a point of view which would disagree with the above interpretations. This viewpoint is represented by those psychiatrists who see "mental illness" as an all-or-none pathological state comparable to contagious diseases, for example. It is largely from these psychiatrists that the data from which the new "epidemiological" studies are derived are being produced. When the public health worker seeks to interpret these data, he will be confronted with the dilemma of an old psychiatric controversy. We can only extend our sympathies to the poor investigator who finds himself innocently caught in the middle.

CLINICAL NOTES

(The Clinical Notes report the findings of the authors and do not necessarily represent the opinions of the Journal.)

A CONTROLLED CLINICAL STUDY OF CHLORDIAZEPOXIDE

ALLAN Z. SCHWARTZBERG, M.D.,¹ AND ROBERT W. VAN DE CASTLE, Ph.D.²

Chlordiazepoxide (Librium)³ has recently been reported (1, 2) to represent an important advance in the psychopharmacologic approach to psychiatric disorders, particularly useful in anxiety, fear, and tension states.

METHODS AND MATERIALS

Twenty-one patients with a diagnosis of psychoneurosis or personality disorder with significant anxiety and tension components were selected. The patients were divided into 3 groups, carefully matched, on the basis of clinical impressions and Minnesota Multiphasic Personality Inventory scores. Each patient served as his own control and received a 2-week supply of either Librium, 10 mg.; meprobamate, 400 mg.; or placebo, in identical capsules, t.i.d. The patients were instructed to adhere carefully to the medication schedule and were allowed to reduce the dosage if significant side effects occurred.

Prior to administration of this drug, each patient completed the following tests: 1. Symptom Check List (3) (a clinical "weighted" questionnaire of 50 items categorizing symptoms under the major areas of psychopathology); 2. Anagram Test (4) (a test representing the number of anagrams successfully solved during a 5-minute period (maximum of 15 words)); 3. Pursuit Rotor Test (5) (a test measuring motor manifestations of anxiety). These tests were repeated at 2-week intervals, in addition to brief psychiatric interviews, to assess the patient's own evaluation of the drug. No attempt was made to do psychotherapy dur-

ing the period of drug therapy, and the doctor-patient relationship was kept at a minimum.

RESULTS

TABLE 1

Mean Scores on Various Anxiety Indices

	Placebo	Meprobamate	Librium
Symptom Check List	47.95	47.00	46.35
Pursuit Rotor Test	1500.20	1625.78	1552.68
Anagram Test	7.10	6.74	6.68

The mean scores for the various anxiety indices are reported in Table 1. The Pursuit Rotor scores refer to the length of time that a patient kept a stylus in contact with a small revolving metal disk during a 4-minute testing session. Scores are expressed in units of 1/1000 of a minute. Differences between the mean scores were evaluated by an analysis of variance technique. None of the resulting F ratios reached the 0.05 level of statistical significance for any of the 3 anxiety indices.

TABLE 2

Mean Scores on Various Anxiety Indices as a Function of Time

	Pre-Drug	Two-Week	Four-Week	Six-Week
Symptom Check List	63.37	54.16	46.90	40.60
Pursuit Rotor Test	743.90	1013.11	1504.37	2128.15
Anagram Test	6.15	7.00	5.47	8.00

The mean scores for the various anxiety indices comparing the pre-drug effects with the results at 2-week intervals are presented in Table 2. No systematic changes were noted for anagram scores, since success appeared to be related to the difficulty of the separate anagram lists. The changes toward improvement on the Pursuit Rotor scores

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³ Chlordiazepoxide (Librium) was generously supplied by Hoffmann-La Roche, Inc., Nutley, N. J.

were significantly different at less than the 0.01 level, when evaluated by an analysis of variance technique. Since this task is also frequently used as a measure of learning, it is not possible to state how much improvement in scores could be traceable to the effects of learning on task performance.

DISCUSSION

A question might be raised as to whether the mean scores in Table 1 might have been unduly influenced by the scores of a few atypical patients. To analyze this factor, a comparison was made of the number of patients whose symptom check-list scores decreased from their initial pre-drug scores. Only 1 patient did not complete the study. It was found that 79% of patients reported improvement (lower check-list scores) while receiving a placebo, 89% with meprobamate, and 74% with Librium. Since so many patients reported improvement beyond their pre-drug status even with a placebo, it is possible that changes in anxiety indices may have occurred as a simple function of participating in a drug study.

In Table 2 we noted that a progressive decrease in the number of symptoms occurred with progression of the study. Not only the severity of the individual symptom but also the number of symptoms markedly declined. The difference between the pre-drug symptom check-list scores and those

obtained at the termination of the study was significant beyond the 0.05 level when evaluated by a *t* test. This latter finding points toward the necessity of control groups in drug research, since it would be possible to demonstrate a significant decrease in symptoms merely through participation in a drug study without obtaining evidence that the effects were due primarily to the drug itself. The study proceeded with minimal dosages throughout. It is entirely possible that different effects would have been obtained if different dosage levels had been employed. Clinical experience with Librium at dosages of 60 mg. and higher has shown more favorable results in symptomatic relief of anxiety than with the dosage used in the study. Two patients reported drowsiness while receiving Librium, but no other significant side effects were noted with any of the drugs.

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CLINICAL REPORT ON METHAMINODIAZEPOXIDE (LIBRIUM)

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Methaminodiazepoxide (Librium)² was prescribed for 53 consecutive suitable patients seen in a big city outpatient clinic. Most of this group had symptoms of long standing and had been unsuccessful in obtaining relief from other drugs and psychotherapy; 15 were obsessive compulsive perfectionists. Because of this failure to respond to previous therapies it may be permissible to consider them their own controls

and to rule out placebo effects although in a few cases placebos were utilized. The usual dose was 10 mg. q.i.d. Periodic blood counts, urinalyses, and transaminase determinations failed to reveal any toxicity. Two patients discontinued the medication due to nausea and vomiting but one of these had the same symptoms with placebos. Other than slight drowsiness, which was relieved by decreasing the dosage, no other side effects were noted at this dosage level.

The results (Table 1) are tabulated as (0) unimproved; (+1) slight improvement

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² Methaminodiazepoxide (Librium) was kindly supplied by Hoffmann-La Roche, Nutley, N. J.

TABLE 1

Result	Obsessive-Compulsive	Depression	Anxiety & Others	Total
0	4	2	12	16*
+1	1	4	1	6
+2	1	1	5	6
+3	1	3	5	9
+4	8	1	5	13
	15	11	28	50

* Some patients were both obsessive-compulsive and depressed so the total does not include them twice.

—loss of a minor symptom or slight reduction in anxiety level (one patient had to discontinue then recommence the drug to be certain of any benefit); (+2) moderate improvement; (+3) marked improvement —only minor symptoms or minimal anxiety remained; (+4) complete relief. Three patients were excluded because psychotherapy and/or concomitant medications confused the issue; however all 3 showed at least moderate improvement. If only those markedly or completely relieved are considered, and that is the least degree of help which really satisfies the patient, this drug was effective in 44%. Although this figure is low it must be remembered that these were chronic neurotics who had not responded to other therapies. Nine (60%) of the 15 obsessive-compulsive patients achieved this

marked or complete relief. This is an excellent result in a condition usually so resistant to therapy. One man was about to sell out his interest in a furniture store because he could not make decisions, talk reasonably with customers, and was becoming severely hypertensive. He is now functioning with pleasant efficiency and his blood pressure fell to 140/90. "I no longer fear to tackle problems." Another worrywart stated, "I feel perfect now. I am able to do things without worrying back and forth first." Of the 11 depressed patients selected because they were fearful, fretful or guilt-ridden, only 1 was completely relieved but 3 more were markedly helped. Librium is not suggested as the drug of choice for depressions but in selected cases may be of definite value in reducing such symptoms when given in addition to other therapies for the depression.

SUMMARY

Methaminodiazepoxide (Librium) was beneficial for 60% of obsessive compulsive patients and for about one-third of others suffering from chronic neuroses and/or depression. These benefits achieved by patients previously considered therapeutically unpromising indicate that this drug is a valuable addition to our armamentarium. In the dosage of 10 mgm. q.i.d. side effects were minimal.

THE CAUSE OF FALSE-POSITIVE TESTS FOR PIPERAZINE-LINKED PHENOTHIAZINES

JACK J. HEYMAN, M.S., AND SIDNEY MERLIS, M.D.¹

During the past several years there has been great interest in simple methods of checking phenothiazine intake in patients. While these tests have been used with a moderate degree of success in many laboratories, the occurrence of false-positive results with some of the more recent of the phenothiazine preparations has been reported (1, 2). We have isolated from urine samples a compound that produces false-positive results with Forrests' test¹ for piperazine-linked phenothiazine reagent (3) but not with Forrests' Thorazine reagent (4).

During the past several years there has been great interest in simple methods of checking phenothiazine intake in patients. While these tests have been used with a moderate degree of success in many laboratories, the occurrence of false-positive results with some of the more recent of the phenothiazine preparations has been reported (1, 2). We have isolated from urine samples a compound that produces false-positive results with Forrests' test¹ for piperazine-linked phenothiazine reagent (3) but not with Forrests' Thorazine reagent (4).

METHOD

The isolation was carried out on normal individuals who had never taken phenothiazine compounds of any description and on patients who had currently been on phenothiazines. The normals' age range: 22 to 42 years; the patients': 30 to 50.

The isolation procedure consisted of dissolving 23 g. of anhydrous sodium sulfate per 100 ml. of urine and 6 g. of dibasic

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sodium phosphate (Na_2HPO_4) per 100 ml. of urine. The pH was adjusted to 11.5. The adjusted urine was then shaken with n-butanol in a separatory funnel. The butanol layer was separated and was stored overnight under refrigeration.

The clear amber-colored butanol was tested for its color development with 3 different reagents. The procedures were: 1. 2 ml. of concentrated nitric acid were added to 10 ml. of the butanol extract. The samples were read in a Klett colorimeter with a green filter against a butanol-acid blank. 2. A 5-ml. butanol sample of extract was treated with 5 ml. of Forreests' Thorazine reagent. The samples were read using a green filter. The blank was butanol-Forreests' Thorazine reagent. 3. A 10-ml. sample of the butanol extract was treated with 2 ml. of Forreests' mercuric nitrate reagent. The samples were read on a Klett with a blue filter against a butanol-reagent blank. The Klett readings reported were computed from the observed reading corrected for the volume of the 24-hour urine samples compared.

RESULTS

The results in Table 1 indicate that the compound extracted gives very significant color development with the mercuric nitrate reagent. It produces much less color with the Forrest Thorazine reagent. In other experiments we have observed that increasing the sulfuric acid above 20% increases the color development. In our study, using ion-exchange resin papers impregnated with ferric chloride, we observed that urine samples treated with 50% sulfuric acid produced close to 100% false-positives even when the source of the urine was from the normals. Forrest indicated a similar role for the tri-

chloracetic acid with the mercuric nitrate reagent(3).

The chemical and physical characteristics of the isolated compound are as follows: the uncorrected MP is 130-131°. Sodium fusion tests reveal that the compound contains nitrogen, but no sulfur or halogen. It is not optically active and does not fluoresce. The compound has an average rf of .96 in n-propanol-.2N NH_4OH (1:3 v/v), using the technique described by Kapeller-Adler and Iggo(5). If the butanol extract is washed with .5N HCl and allowed to stand in air it changes in color from amber to green to blue to red over the course of several days. While this behavior is suggestive of a porphyrin, the compound fails to give a Soret band and is, therefore, probably not a porphyrin-type compound. The UV spectra do not demonstrate adsorption characteristic of either an indole or a pyridine. The compound couples with diazotized sulfanilic acid to give an orange color. With concentrated nitric acid a violet color changing to a red brown is observed. It precipitates as a red-colored salt. It is Biuret-negative. With the mercuric nitrate reagent it gives a violet-blue color. With concentrated HCl it gives a peach color which turns violet. With 3% hydrogen peroxide and concentrated HCl it gives a violet color.

CONCLUSION

We have isolated a compound which is probably responsible for the observation of false-positive phenothiazine tests not attributable to acute or chronic liver disease, phenylketonuria, high salicylate or other drug intake(6). Since the isolated compound produces color with nitric acid it may interfere with Forreests' FPN reagent (7) and Neve's test(8). The isolated com-

TABLE 1
The Volume-corrected Quantitative Results of Color Development of the Butanol Extracts with Various Reagents, Expressed as Klett Units.

Source of Sample	Dose of Thorazine	HN03	Forrest P Reagent	Forrest Thorazine Reagent
Normal	0	269	235	21
Patient G	600 mg.	161	76	90
Patient J	300 mg.	297	91	121
Patient K	300 mg.	185	58	74
Patient V	150 mg.	229	59	66

pound is not a bile pigment, a phenol, an indole or a pyridine.

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THE INFLUENCE OF CORTISONE-ACETATE ON SOME SERUM PHOSPHORUS METABOLITES IN YOUNG MALE SCHIZOPHRENICS

PAUL KOCH, Ph.D., CAMILLE LAURIN, M.D., AND ROGER LEMIEUX, M.D.¹

This study is part of a research undertaken to establish, if possible, simple biochemical differences between schizophrenic and non-schizophrenic psychiatric patients. Tests based on such differences could serve to circumscribe more closely the clinical diagnosis and would permit screening for schizophrenia among newly admitted patients.

This paper deals with differences in some serum phosphorus metabolites found after stimulation with cortisone acetate² between 2 comparable groups of schizophrenics and non-schizophrenics.

Considerable evidence has been accumulated that schizophrenics react differently to stress (1, 2) and to ACTH and Corticoids (2, 3, 4, 5). The most striking difference of reaction that has come to our knowledge has been an abundant phosphaturia induced in schizophrenics by ACTH (1, 2). Similar phosphaturias could be induced by ACTH in human volunteers (1) as well as in guinea pigs (6) after the administration of the hallucinogene LSD-25. Stevenson, *et al.* (7), Lovegrove, *et al.* (8), as well as ourselves (9) have tried to utilize the corticoid-induced phosphaturias as a biochemical test for schizophrenia but with disappointing results.

It was thought that the phosphaturias probably originate in some serum phosphorus metabolites. Therefore it was decided to study the mineral phosphorus, the total acid soluble phosphorus, the lipid phosphorus and the alkaline phosphatases in the serum of schizophrenics, following administration of cortisone.

MATERIALS AND METHODS

Thirteen male schizophrenics, aged 20-40, suffering from various types of the disease, were compared with a corresponding control group of 13 young male patients, suffering from other psychiatric syndromes. It was found necessary, later on, to add to the experiment a third group which consisted of 7 young male schizophrenics and which served as a double placebo² control.

On the first day all medication was suspended at noon and was not resumed until after the end of the experiment. However, the subjects received, each night, 200 mg. chloral hydrate to ensure sleep. Fasting was enforced every day after supper and lasting until noon of the following day.

On the second day blood was drawn at 9:00 a.m. and a placebo was given. Blood was drawn again at 10:00 a.m. and at 11:00 a.m. Food was permitted at noon.

On the third day the same routine was followed as on the second day. The placebo was substituted by a pill, containing 100 mg. cortisone acetate. The nature of the pill was not known to anyone having direct contact with the patients.

Because of the long lasting effect of corti-

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² We wish to thank Merck & Co. for the gracious gift of the cortisone acetate and the placebos, as well as Miss Fernande Bastien for her capable technical assistance.

sone, no inversion in the order of the treatments was attempted. For this reason a third group of schizophrenics has been added, which received placebos on both days. This was done to find out whether any variations of phosphorus metabolites could be due only to the withdrawal of the medication.

Twenty ml. of blood were drawn each time. Ten ml. were destined for serum (mineral phosphorus and alkaline phosphatases), while 10 ml. were received into an ice cooled test tube containing versenate as an anticoagulant. This sample was processed very rapidly to furnish plasma (acid soluble phosphorus and lipid phosphorus). All analytical methods were standard procedures (10).

Since very little difference seemed to exist between the samples taken at 10:00 a.m. and those taken at 11:00 a.m., their arithmetical means have been used in the results in order to simplify their presentation.

DISCUSSION AND CONCLUSIONS

Cortisone does not vary any of the phosphorus metabolites investigated in the blood of the non-schizophrenic controls. In the schizophrenic experimental group it decreases the lipid phosphorus at the 5% level and increases the alkaline phosphatases at the 2% level of significance. That this variation is due to cortisone and not to the suspension of the medication has been shown

by the third group. There was no variation of any metabolites studied.

The levels of the alkaline phosphatases appear quite low. It has been our experience in routine laboratory work that phenothiazines tend to depress the phosphatase level in the absence of hepatic involvement. This depression is quite persistent.

Comparing the increase of the phosphatases with the decrease of the phospholipids one cannot help speculating whether the 2 phenomena are not connected.

A broader study is now in progress involving a similar group as well as older patients and women.

SUMMARY

Oral cortisone acetate can differentiate between young male schizophrenics and a comparable control group by inducing an increase in alkaline phosphatases and a decrease in phospholipids in the former. No such changes were observed in the latter group.

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TABLE 1: Results

Influence of 100 Mg. Cortisone Acetate on Various Serum Phosphorus Metabolites in Young Male Schizophrenics and Non-Schizophrenic Psychiatric Patients

		MIN. P. MG. %	AC. SOL. P. MG. %	LIP. P. MG. %	P'ASES UNITS
Non Schizo. Controls (13)	PLACEBO	3.42±0.22 *	4.01±0.13	12.1±0.43	0.81±0.13
	CORTISONE	3.2 ±0.1	3.83±0.15	11.1±0.53	0.85±0.14
	PROBABILITY **	<0.9	<0.3	<0.2	<0.7
Schizo. Controls (7)	PLACEBO (1st day)	3.30±0.23	4.10±0.31	10.5±0.60	0.75±0.10
	PLACEBO (2nd day)	3.18±0.28	3.98±0.19	10.3±0.48	0.78±0.09
	PROBABILITY	<0.8	<0.8	<0.6	<0.9
Schizo- phrenics (13)	PLACEBO	3.15±0.25	4.08±0.26	12.0±0.57	0.53±0.1
	CORTISONE	3.07±0.20	4.03±0.22	10.2±0.61	1.12±0.17
	PROBABILITY	<0.8	<0.9	>0.05	>0.02

* Standard error of the means.

** The probabilities were calculated by means of Student's "t."

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EFFECT OF THE COMBINED ADMINISTRATION OF IMIPRAMINE AND A MONOAMINE OXIDASE INHIBITOR

WILLIAMINA A. HIMWICH, Ph.D., AND JOANN C. PETERSEN, B.A.¹

We have been encouraged to publish a brief note on our animal experiments by the recent clinical reports(1, 2) of disastrous results from the combination of imipramine (Tofranil, Geigy) and a monoamine oxidase inhibitor. Over the past year a series of dogs has been given a combination of imipramine followed by a monoamine oxidase inhibitor, tranylcypromine (Parnate, Smith Kline & French). Our animals were routinely treated daily for 5 days with an intramuscular injection of 10 mg./kg. of imipramine dissolved in water. Behaviorally, this medication appeared to have little effect, especially if the animals were exposed to the stimulus of cage mates or animals in adjacent cages. However, in a quiet room it could be noted that chronic imipramine administration resulted in a tendency for the animal to drowse. On the fifth day the intramuscular injections of imipramine was followed immediately by the intravenous administration of 2 mg./kg. of tranylcypromine. The behavioral results of this combined medication and the effect upon serotonin content of the brain have been described in detail elsewhere(3). It is sufficient to note here that the animal appeared drowsy at first—about 2 hours later both males and females showed rhythmic twitching of the hind legs. In the males this twitching progressed to repeated sexual orgasms, whereas in the female, although the twitching slowly became more violent and more rhythmic, no sexual orgasms were ob-

served. As has been reported in human patients, some animals receiving imipramine and tranylcypromine showed marked hyperthermia and profound salivation. If the same animals were given the identical drug schedule, but with chlorpromazine (Thorazine, Smith Kline & French) replacing imipramine, no disturbances were noted. Chlorpromazine appeared to make the animal somewhat sedated on the first day of administration, but after that had little effect. The addition of tranylcypromine to chlorpromazine evoked no unusual behavioral picture.

EEG's were recorded from the areas of the right and left motor cortex by means of silver ball electrodes chronically implanted on the surface of the dura in animals receiving 1. Imipramine alone for 4 days, 2. Imipramine and tranylcypromine on the schedule given above, or 3. A single dose of tranylcypromine. The EEG recordings show that there was a tendency for the animals receiving imipramine alone to sleep more readily than the untreated animals and to be less easily aroused from sleep by auditory stimulation. In animals which received tranylcypromine following imipramine, the EEG drowsy picture lasted longer than with imipramine alone. The record then progressed to marked alert activity in the cortex accompanying the orgasm, or, in the case of the female in association with the rhythmic twitchings of the hind legs. The EEG alert pattern appeared spontaneously at a time immediately previous to which an alert EEG could not be evoked by means of external stimuli such as a hand clap.

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After the disappearance of gross motor activity, which may last for as much as 2 hours, the animals again were asleep and exhibited a drowsy EEG pattern which could not be changed by auditory stimulation.

EEG recordings of animals given chlorpromazine alone showed a typical drowsy-like state similar to that following imipramine. The addition of tranlycypromine after chlorpromazine resulted in sleep during which an arousal response could be elicited by a hand clap. Tranlycypromine alone produced in the dog an EEG tracing which was only slightly more desynchronized

(alert) than normal. Behaviorally, the animals seemed tense, restless and easily stimulated by environmental conditions. Our studies are continuing along this line in an attempt to explain the clinical results obtained in some patients when imipramine is combined with a monoamine inhibitor.

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COMPARISON OF MARPLAN AND TOFRANIL IN THE TREATMENT OF DEPRESSIVE STATES

JANE E. OLTMAN, M.D., AND SAMUEL FRIEDMAN, M.D.¹

This comparative study of Marplan, a monoamine oxidase inhibitor type of antidepressant drug, and Tofranil, a non-MAO inhibitor, has been conducted during the past 8 months. The material consisted of female patients, newly admitted to the hospital and suffering from acute or recurrent depressive illnesses. There were 120 individual patients in the study; however, because some patients underwent treatment with both drugs in tandem or because of occurrences of 2 discrete episodes of illness during the study period, there was a final total of 140 treatment periods, with 70 patients in each drug group. Distribution by age and diagnostic category was essentially identical for both groups. Marplan was used in initial dosage of 30 mgm. daily, with increase to 60 mgm. daily, usually within the first week; Tofranil was used in dosage varying from 100 to 200 mgm. daily, most frequently at a level of 150 to 200 mgm. daily.

Results were designated as satisfactory (A level) for patients who achieved a remission or much improved status, and as unsatisfactory (B level) for those who failed to improve, or exhibited partial improvement only. Final results were very similar in

both drug groups. In the Marplan group, 51 of the 70 patients, or 72.9%, achieved an A level of improvement, and in the Tofranil group, 50 of the 70 individuals, or 71.4%, attained a similar level. It may be noted also that the results in the current Marplan group were practically identical with those previously reported² in a group of female patients treated with this drug.

With respect to the rapidity of improvement, it appeared that, in general, Tofranil produced a slightly more rapid effect. Thus in patients successfully treated with Tofranil, satisfactory improvement was noted temporally in the following cumulative manner: in 2 weeks, 11%; in 3 weeks, 38%; in 4 weeks, 72%. For the Marplan group, the corresponding figures were: in 2 weeks, 3%; in 3 weeks, 12%; in 4 weeks, 52%. Thus only 28% of the Tofranil group required more than 4 weeks for the establishment of satisfactory improvement as compared with 48% of the Marplan group. By the end of the fifth week, however, the cumulative percentage of satisfactory results was again very similar in both groups, namely, about 80%. Thus, on an average, Tofranil appeared to exert its optimal effect in favor-

² Oltman, J. E., and Friedman, S. : (a) *Am. J. Psychiat.*, 116 : 848, 1960. (b) *Dis. Nerv. System*, 21 : Supp., March 1960.

¹ Fairfield State Hospital, Newtown, Conn.

able cases possibly 5 to 6 days sooner than did Marplan. A further advantage of Tofranil was its availability in parenteral form.

Some patients who failed to improve satisfactorily under one drug did so on the other. Thus 6 patients who were regarded as failures under Tofranil therapy achieved a successful result with Marplan, and conversely, 5 patients who were therapeutic failures with Marplan, improved satisfactorily under Tofranil. Seven patients failed to improve under both drugs used in tandem, and 2 patients achieved a remission under each drug used separately in 2 discrete episodes of illness.

With respect to the incidence of complications, it may be stated that there were no serious complications in either group. The incidence of side-effects, although these were rarely excessively troublesome, ap-

peared to be slightly higher in the Tofranil group. In this group the following number of complaints or side-effects appeared: edema, 2; dizziness, lightheadedness, *etc.*, 15; excessive perspiration, 9; constipation, 4; neuralgia, 2; skin eruption, 1; incontinence, 1; tremors, 1; dry or peculiar taste in mouth, 3; and manic swing, 2. In the Marplan group there were: edema, 10; dizziness, lightheadedness, *etc.*, 11; excessive perspiration, 1; dryness of mouth, 1; and manic swing, 1. One patient in the Tofranil group suffered a slight fracture of the nasal bone when she fainted during a dizzy spell.

In conclusion, therefore, it may be stated that both Marplan and Tofranil are effective antidepressant drugs. Tofranil appeared to exert its action somewhat more rapidly but, on the other hand, the incidence of side-effects was somewhat greater than with Marplan.

THRESHOLDS FOR DRUG-INDUCED AKATHISIA¹

DANIEL X. FREEDMAN, M.D.,² AND JACOB DE JONG, M.D.³

The critical determinants of drug-induced akathisia have generally been ascribed to the basic phenothiazine structure, particular substitutions on it, and the level, period and rate of increase of the dosage. To determine whether individual factors contribute to the incidence of akathisia, this study was designed to detect sensitive individuals who would develop akathisia on low dosage and early (within 14 days) in the course of phenothiazine administration.

MATERIALS AND METHODS

From hospital records, 31 chronically schizophrenic women were selected as a "presumptively sensitive" group. The mean age was 55 (range 29-76); average length

of hospitalization, 11 years (range 2½-27). Prochlorperazine (Compazine) 10 mg., perphenazine (Trilafon) 4 mg. and thioridazine (Mellaril) 50 mg. were tested in a Latin square design with the notion that the substituent on Mellaril had less akathisia-inducing potency than the piperazine-substituted drugs. These sub-clinical doses (clinically equated for potency) delivered in identical capsules, b.i.d. for 8 days, were then doubled for 4 days and followed by 7 days of meprobamate (Equanil) whereupon the next test sequence began. Akathisia was scored by physicians who, blind to rotations, evaluated rating sheets completed by ward staff who were blind to the rotations and the intent of the study. Scorable symptoms occurred and disappeared within a few days after administration and withdrawal of the phenothiazine compound.

RESULTS

Sixteen of the 31 patients did not develop akathisia. Four patients (Group 1) had akathisia with the 3 drugs tested; they had the most severe disturbances with associated

¹ Supported by USPHS Grant M-1204, N.I.M.H.; Drugs supplied by Mr. S. Gimpel, Sandoz Co.; Dr. R. Burlew, Schering Corp.; and Mr. J. Bird, Smith Kline & French.

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³ Physician and Psychiatrist, Fairfield State Hospital, Newtown, Conn.

Parkinsonian symptoms. Four patients (Group 2) developed akathisia only on Trilafon and Compazine. Seven patients (Group 3) developed akathisia on no more than one of the three tested drugs. On repeat study, individuals retained their group membership. In both trials, the time of the initial onset of symptoms (from the 2nd to the 11th days) varied. The duration of such sensitivity groupings is untested beyond a 7-month period and the dose and time parameters used, but the specificity of low-dose akathisia was demonstrated by further re-testing of selected individuals. For each individual in Group 1 a potent phenothiazine was found with which akathisia did not develop.

These patients are not indifferent to the substituent on the phenothiazine nucleus, but rather show specific sensitivity to specific configurations; *i.e.*, these are polysensitive and *not* pansensitive persons. Particular substituents (*e.g.*, piperazine) appear to be specific for a larger number of individuals than other molecular moieties; for a small group of individuals a large but restricted number of different molecular structures would be akathisia-inducing.

Among the 4 groups tested, no differentiating personality features were discerned; such factors await further study. Biological specificity for molecular structure, demonstrated in a number of pharmacologic studies, is evident here for side effects. In view of the relationships between extrapyramidal symptoms and tranquilization (1, 2, 3) the question arises whether phenothiazines

could also have biological specificity with respect to the tranquilizing potency.

SUMMARY

The findings indicate that low-dose akathisia results from an individual's specific sensitivity to a specific molecular configuration. There is a population with a low threshold for the disorder. Thresholds are determined by the spectrum of individual sensitivities for specific molecular configurations, administered in a specified dosage schedule. The incidence and intensity of low-dose akathisia depend on at least 2 factors: the population tested, and specific molecular structure.

TABLE 1
Frequency of Akathisia, Trial 1 or 2

	TOTAL % INDUCED BY DRUGS ³	Groups (N-15)		
		I N-4	II N-4	III N-7
Trilafon	80%	4/4	4/4	4/7
Compazine	67%	4/4	4/4	2/7
Mellaril	33%	4/4	0/4	1/7
% Induced in Groups		100%	67%	30%

³ Different dosage and period of dosage could alter the frequency of akathisia by drug.

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CHLORPROTHIXINE (TARACTAN) AND ISOCARBOXAZID (MARPLAN) IN PSYCHOTIC DEPRESSIONS

HARRY F. DARLING, M.D.¹

Each drug was used as the medication of first choice on 50 ambulatory psychotic depressed patients, in conjunction with definitive psychotherapy. The patients were followed for three months or more, except that patients who showed slight or no improvement (as well as those who became

worse) were put on other therapy when it became evident that no further improvement would occur.

Table 1 shows age, diagnosis, improvement, side effects and duration of illness; only disturbing side effects are listed.

Dosage of Marplan varied between 20 and 60 mg. daily; in almost all cases 30 mg. was used. It was slowly and cautiously de-

¹ Kanner Bldg., Lawrence, Mass.

TABLE 1

Comparison between Marplan and Taractan.

(Figures, except referring to ages, denote number rather than percentage of patients.)

	MARPLAN	TARACTAN
Age range	22-67	18-77
Mean age	48	43
Diagnosis		
Involutional depression	20	18
Manic depressive depressed	21	20
Manic-depressive, mixed	6	8
Psychotic depressed reaction	1	1
CBS	2	3
Improvement		
Marked	29	31
Moderate	8	6
Slight	6	5
None	4	3
Worse	3	5
Side effects		
Drowsiness	1	6
Hypotension	2	0
Equilibrium disturbance	1	0
Edema	2	1
Insomnia	2	1
Mania	2	0
Duration of illness		
Less than 6 months	39	17
6-12 months	5	6
Over a year	6	7

creased when improvement was attained. The 2 patients who became manic were controlled by reducing the dose, as was the patient who had equilibrium disturbance. Both edema cases were controllable with diuretics. Both insomniacs had to be taken off the drug.

Dosage of Taractan² was extremely vari-

² The chlorprothixine for this study was supplied by Roche Laboratories under their trade name "Taractan" and through the courtesy of Robert E. Dixon, M.B.

EFFECTS OF TRIFLUOPERAZINE IN AGED DEPRESSED FEMALE PATIENTS¹

GEORGE W. BROOKS, M.D., AND M. GLENN MacDONALD, M.D.²

Twelve female patients suffering from manic-depressive or involutional psychoses were selected¹ for study. Four were diagnosed manic-depressive reaction, depressed type, 8 were diagnosed involutional psychotic reaction. Age range: 60 to 74, average 68 years. Hospitalization was between

able, between 30 and 400 mg. daily, and seemed to vary with the type of depressive syndrome as well as with the individual patient. In general the extremely agitated, active, insomniac patient took a lower dose than the quiet, unresponsive, listless patient, although there were exceptions. When a higher dose was used in this latter type of patient disturbing drowsiness was prone to occur; indeed 5 of the 6 patients who became disturbingly drowsy were of this type. Temporary drowsiness controlled by reduction of dose is not tabulated; there were 11 such cases. Two marked and 1 moderate improvements on Taractan were only temporary.

Concomitantly with dosage was also noticed a difference in improvement between the agitated and the non-agitated patients. Of the 29 patients who improved markedly with Marplan, 21 were not agitated. Of the 31 patients who improved markedly with Taractan, 20 were agitated. Possibly because they had schizoid features, 4 of the 5 patients who became worse with Taractan were involutional.

CONCLUSION

Of the 2 drugs, Marplan seems more indicated as the drug of choice for the non-agitated endogenous depression, Taractan for agitated depression.

17 and 333 months, averaging 166 months. Eight had received an average of 18 electroshock treatments each. Seven had received other tranquilizers for an average of 32 months each.

Initial evaluation consisted of a review of their histories, physical examinations, blood counts, serum cholesterols, chest x-rays, electrocardiograms, and exercise tests. Pulse, blood pressure, and electrocardiogram were recorded 2 minutes, 4 minutes, and 6 minutes after exercise. Clinical status

¹ Study made possible by USPHS Grant MY-1752-C of the NIMH.

² Respectively, Assistant Professor of Clinical Psychiatry and Clinical Associate in Medicine, University of Vermont College of Medicine, Burlington.

and blood counts were reviewed weekly. A second exercise test was performed after the fourth week on trifluoperazine. After the treatment period ended, the initial evaluation procedures were repeated.

Upon completing the first clinical studies, 1 patient was found to have active tuberculosis, 1 had chronic bronchitis and emphysema secondary to severe scoliosis, and another had x-ray and physical findings of emphysema but no respiratory symptoms. One patient had a Parkinsonian tremor. None had findings of cardiac disease, although 2 were previously diagnosed as having arteriosclerotic heart disease and congestive cardiac failure. One of these had been on maintenance doses of digitalis for 40 months which was continued during this study.

Patients receiving other tranquilizers had their medication reduced and then stopped over a period of 1 week. No medication was given for 10 days, then trifluoperazine, 4 mg. daily, was started. On the fifth day, the dose was increased to 7 mg. daily, and on the eleventh day to 10 mg. daily. Four days after the 10 mg. dose, 8 patients required bengtropine to ameliorate signs of Parkinsonism. After 6 weeks of treatment, all were either receiving anti-Parkinsonism medication or had had their trifluoperazine discontinued because of severe Parkinsonism, characterized by cogwheel rigidity and a high incidence of dysphagia. Even after rapid reduction of medication to levels as low as 2 mg. of trifluoperazine daily, rigidity and immobility were not adequately relieved.

The patient with tuberculosis was started on anti-tuberculous treatment, but showed progression of her disease. One became lethargic, looked ill, but no clinical or laboratory findings were present to explain this; she returned to her usual health after

the drug was stopped. One developed a leukopenia of 3,500 at the end of the treatment period. The following week, after trifluoperazine had been stopped, her count rose to 6,000. Another developed an erythematous petechial-type rash over pressure areas. Laboratory findings were normal and the rash disappeared after medication was stopped. There were no significant changes in the physical status of any of the other patients.

Exercise tests were not well standardized for the group due to lack of physical conditioning, coordination, and, in a few, lack of cooperation. Tests failed to reveal evidence of cardiac disease. One developed a nodal tachycardia of short duration immediately after exercise which was not considered significant. Blood cholesterol response was of interest. Eight of 11 patients showed an unexplained drop in serum cholesterol. Two remained the same and 1 increased. The drop ranged from 1 to 150 mg.%, averaging 49 mg.%. Diet, activity, and stress were unchanged during the treatment.

Eight showed no benefit from medication. Three were somewhat more alert, cheerful, and active. One showed dramatic and apparently complete recovery from a severe depression of 8½ years' duration within 10 days after beginning treatment. She left the hospital, continuing medication.

CONCLUSIONS

It would appear that the incidence and severity of Parkinsonism in this age group is so high that trifluoperazine should be used very cautiously. Occurrence of 1 very dramatic recovery and 3 cases of gratifying improvement suggest that trifluoperazine may be useful in cases of chronic depression resistant to more usual therapies.

CASE REPORTS

A NEAR FATAL CASE OF IMIPRAMINE OVERDOSAGE

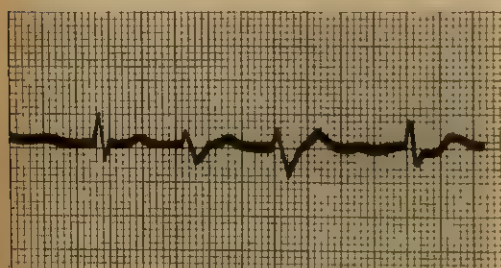
GENEVIEVE A. ARNESON, M.D.¹

Since imipramine (Tofranil) is being used extensively at the present time for the treatment of patients with depressions,

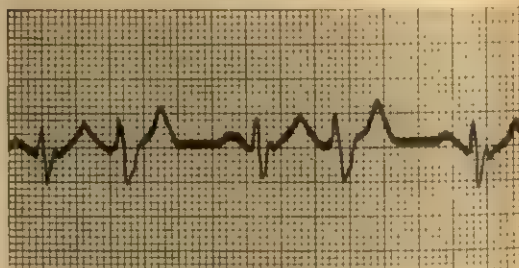
¹Department of Psychiatry and Neurology, Louisiana State University School of Medicine and Charity Hospital of Louisiana, New Orleans, Louisiana.

many of whom may manifest suicidal tendencies, the chances of this drug being taken in overdosage in a suicidal attempt is an ever present risk. Although the case described below was an accidental ingestion it demonstrates well the sequence of events, the toxic manifestations and some of the

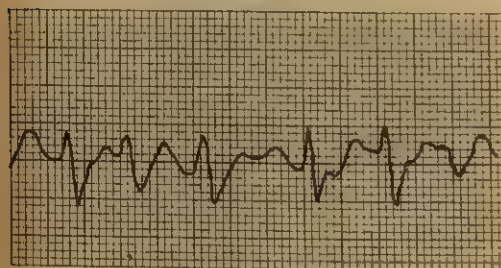
FIGURE 1



9:20 P.M. 6/13/60

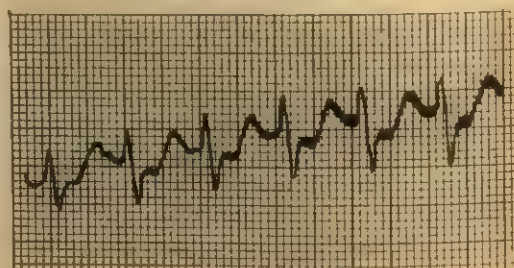


12:00 Midnight 6/13/60



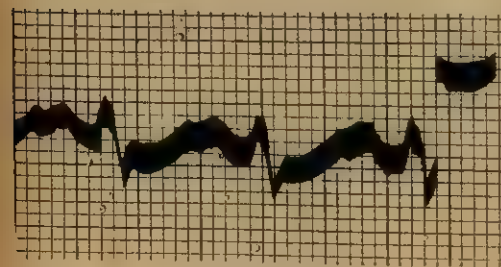
4:45 A.M. 6/14/60

Right bundle branch block
Digitals effects?
No other abnormalities present

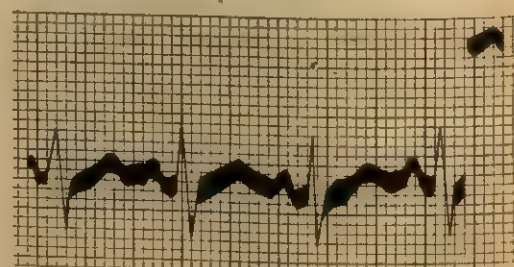


7:00 A.M. 6/14/60

Notched QRS v1
ST v2, 3 depressed
ECG strongly suggestive of myocardial disease.
Improvements since last ECG.



Noon 6/14/60



8/17/60

Serial EKG's on Patient

complications that can result from this medication in overdosage.

Case Report: Patient is a 19-month-old white male who ingested outright, 50-25 mg. imipramine tablets, and sucked the sweet coating off 50 more, getting about half the active ingredient in the process. Patient ate the tablets in the early evening, 7:00-7:30 P.M., on June 13, 1960, while in the care of a baby sitter. The baby sitter noted that the patient looked "funny" and then vomited. She called a neighboring physician who came immediately. By the time he arrived, the patient had begun to convulse. The doctor immediately rushed the child to the New Orleans Charity Hospital. Because of traffic difficulties approximately $\frac{1}{2}$ of an hour elapsed before the child reached the emergency room of the hospital. During this period he was in status epilepticus. Upon reaching the emergency room the patient was immediately intubated, gaged, and given 2½ grs. of sodium amytal, I.V. to control the seizures. Shortly after receiving the amytal, patient's respirations ceased. Artificial respiration was begun and had to be continued over the next 5 hours, before spontaneous respiration returned. Additionally, the patient was exhibiting a marked cardiac arrhythmia. EKG's were taken which showed complete disruption of the normal sinus rhythm, complete heart block, ventricular beats originating from various foci, extremely widened QRS complexes and depressed ST segments. In short, electrical evidence of a marked conduction defect within the cardiac musculature (see Figure 1).

The physicians at the hospital were unfamiliar with the effects of this drug in toxic quantities and were at somewhat of a loss as to how to treat the patient other than symptomatically.

Patient was given 200 cc. of whole blood since systolic blood pressure was 80/? and hematocrit 35%. Additionally, urinary output was poor so that catheterization was required over the next 48 hours. Patient's fluid intake was maintained via intravenous 10% glucose and normal saline. No further sedation was given other than the above mentioned sodium amytal. Hyperpyrexia, methemoglobinemia, and electrolyte disturbances which have been reported did not develop with this patient.

Over the next 24 hours the patient gradually regained consciousness. However, he continued to be drowsy, lethargic, somewhat ataxic and incoordinant, especially on his left side. He tended to have periods of marked irritability, accompanied by involuntary athetoid movements, alternating with deep lethargy, almost

a postictal coma. It was felt that these episodes were some sort of epileptic equivalent. However, within 48 hours the patient was pretty well back to normal, and from this time forward his clinical improvement was rapid and his EKG gradually returned to normal (see Figure 1). The patient was discharged after 7 days of hospitalization and has shown no untoward effects since that time.

DISCUSSION

It is estimated that the child probably ingested about 1,500 mgms. of the drug. Since the ingestion was almost immediately detected, patient vomited, and also was subjected to gastric lavage within an hour and a half after ingestion, it is apparent that this medication is absorbed quite rapidly from the G.I. tract. However, there is no way of knowing how much of the drug was actually absorbed into the blood stream. Even so, it is probably safe to say that patient probably got at least half of the amount ingested. With the child weighing 10 kilograms he thus received a dosage in the amount of 75 mg./kilogram². If we consider this dosage in terms of the acute toxicity of such compounds as digitoxin where the fatal dose is considered around 0.5 mg./Kg. or phenobarbital, fatal dosage around 100 mg./kg.(2) the toxicity of this compound is relatively low. However, with a drug such as chlorpromazine where 1,000 mg./Kg. have been ingested in a suicidal attempt with complete recovery by the patient(3), this drug would appear to be relatively more toxic. The dosage levels which have been used in animals to elucidate the pharmacodynamics of this drug have been of the order 1-10 mg./Kg.(4). The usual therapeutic dose is of the order 0.3-0.5 mg./Kg.

Imipramine is known to produce convulsant spikes in the amygdala and hippocampus of rabbits at dosages of 30-50 mg./Kg. Although, at lower dosages (2.5-10 mg./Kg.) the drug dampens the EEG arousal pattern produced by sciatic nerve stimulation(8). It is thus easy to under-

² Michon, *et al.*(1), reported a suicide in a young French woman who ingested 150-25 mg. tablets. This amount of the drug in an adult represents considerably less per unit of weight than in this patient. However, their patient died 3 1/2 hours after ingestion.

stand how the large dosage ingested by this patient resulted in generalized seizures which probably originated in the rhinencephalic structures noted above. In this patient the grand mal seizures were seemingly fairly easily and rapidly controlled by I.V. Na Amytal.

It is uncertain as to whether the apnea was secondary to the sodium amytal, although the dosage given was quite small. However, the possibility of the amytal potentiating the possible depressant effect of imipramine on the respiratory center is a possibility. There is no question that the immediate intubation and artificial respiration were life-saving procedures in this patient.

It was the consensus of opinion that the cardiac effects noted were peripheral ones involving the conduction mechanisms within the cardiac musculature. It was agreed that central effects of drugs primarily alter cardiac rate but that only peripheral effects on the conduction mechanism of the heart could produce the conduction defect that was observed in this patient. Michon also reported cardiac conduction defects in the fatal case referred to above.

Cardiac tissue apparently has an affinity for imipramine. Häfliger(5), reporting on the differential distribution of the drug in the tissues of rabbits following intravenous injection, found the concentration to be highest in kidney, brain, heart, muscle, body fat, liver, and plasma in that order.

Many compounds are known to produce similar nonspecific EKG changes, *viz.*, digitalis, quinidine, potassium in excess, "Le-

vophed," *etc.* It is of interest that I.V. "Levophed" (1-norepinephrine) has been known to produce a similar, though transient, EKG picture. Imipramine is thought to produce its effect in the central nervous system by "blockage" of both serotonin and norepinephrine. The brain levels of both these compounds are increased by imipramine administration(6, 7). Increasing blood levels of norepinephrine via its release from sites in the nervous system by imipramine might possibly explain this conduction defect, or via a more direct toxic effect of the drug or, perhaps the cardiac effect is totally unrelated to these compounds. More work is indicated to elucidate the mechanism of the production of the conduction defect within the heart that was observed with intoxication by this drug.

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A CASE OF PSYCHOSIS PRECIPITATED BY CONFINEMENT IN LONG DISTANCE TRAVEL BY TRAIN

HARBHAJAN SINGH, M.D.¹

Since World War II there has been an increased interest in psychoses precipitated by isolation and prolonged confinement. With the advent of the space age, where men will be subjected to extensive periods of isolation both spatially and temporally, this condition takes on added importance.

The following is a case report of a psychotic episode precipitated by a 48 hour railway coach ride.

Case Report : A 64-year-old white male patient was admitted to the Emergency Department of the Ottawa Civic Hospital with lacerations of his face and various other parts of his body on August 14, 1960. Physical examination

¹ Ottawa Civic Hospital, Ottawa, Can.

revealed no serious injuries of an internal nature. This man had leaped from an Ottawa-bound train, travelling at about 45 miles per hour, shortly before the train reached Ottawa. While still in the Emergency Department the patient was given a psychiatric evaluation and was followed through during his stay in the hospital.

According to the history obtained from the patient and his wife, they both had emigrated from England in 1926 and had settled in Saskatoon, Saskatchewan. About 4 years ago the patient's wife started losing her vision and gradually became completely blind. The patient retired from his job in order to care for his wife. Since both he and his wife were drawing old-age pensions, they decided it would be worthwhile to return to England where they could be close to their families and where, they felt, the wife would receive more abundant care. The patient and his wife left Regina, Saskatchewan, by railway coach, on their way to Montreal where they were to board a boat for England. Travelling by coach, and because of his wife's blindness, the patient was very restricted in his ambulations. He was unable to take her to the dining car or to walk in the train, having to minister to his wife even to the extent of helping her to use the bathroom facilities. Their diet during the train ride consisted entirely of sandwiches and coffee.

The patient's wife had experienced a nervous breakdown about 10 years previously which required hospitalization. On the train she became somewhat insecure, kept holding his hand, and wouldn't even permit him to get up from the seat. On the second day of travel the

patient began to show signs of restlessness. The following day, he manifested a belief that the fellow passengers were accusing him of spreading venereal disease, especially through his wife. This delusion was tied in with his role as nurse-maid to his wife and with his helping her in toileting. He suspected the fellow passengers of taking flash photographs of him, and of tape-recording all his conversations, with the aim of getting him off the train (because of his V.D.). He also believed that if he did not get off the train one of the leaders of the group would stab and kill him. This group, he believed, was being paid to get rid of him by a secret persecuting agency.

While in the Emergency Department the patient stated that he had jumped from the train, not to kill himself, but to escape his persecutors. He was coherent, relevant, and well oriented in all spheres and his conversation, other than in the circumscribed delusional area, was quite rational. Evidence of memory impairment could not be elicited, nor was there any history of previous mental disturbance. Physical examination and laboratory findings were essentially negative.

The patient was put on 50 mg. of chlorpromazine t.i.d. He calmed down considerably under this medication, relaxed, and became very pleasant and co-operative. However, he retained his delusional thoughts concerning the train incident throughout his stay in the hospital and was discharged 9 days after admission as improved.

The patient, still on chlorpromazine, was sent to England by air travel and was advised to seek psychiatric care there.

AORTIC DACRON GRAFT SURGERY AND ELECTROSHOCK: REPORT OF A CASE

A. H. CHAPMAN, M.D.¹

In recent years, as new types of vascular surgery have been developed, the clinical problem will arise occasionally as to how a patient who has undergone such surgery will later tolerate electroshock if he should need it(1). I am here reporting successful electroshock therapy in a patient who had had surgical removal of the terminal aorta and the proximal parts of both common

iliac arteries with replacement by a dacron prosthesis.

The first report of electroshock treatment in a patient with an aortic graft was made by Monke in 1952(2). Weatherly and Villien in 1958 reported 8 electroshock treatments without complication in a depressed patient who had previously had a homograft replacement in his thoracic aorta after removal of an arteriosclerotic aneurysm(3). Greenbank in 1958 reported a patient who had previously had homograft replacement

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of the terminal aorta and its bifurcation, to whom 10 electroshock treatments were given without difficulty(4).

Case Report.—This 45-year-old married housewife developed pain, burning and numbness in both feet and legs in early 1958. She had increasing cyanosis and cramping in her legs and some low back pain. These symptoms were aggravated by exercise, and relieved by elevation of the feet and legs. On examination in early 1959 she was found to have cyanosis on dependency in both legs and diminished femoral pulses; no pulsations could be felt in her feet.

In May of 1959 the patient had surgical resection of the terminal 8 cm. of her aorta, and removal of the aortic bifurcation and the proximal several centimeters of both common iliac arteries. A crimped dacron prosthetic graft was sutured into place by end to end anastomosis to the terminal aorta and the common iliac artery on each side. A bilateral lumbar sympathectomy was performed from L-2 to over the pelvic brim at the same time.

The patient's post-operative course was satisfactory, and she has since remained free of vascular symptomatology. Pathological examination of the removed section of aorta and common iliac arteries showed obliterating arteriosclerosis.

Beginning in the spring of 1960 the patient became progressively depressed and agitated. She slept poorly, felt people did not like her and cried a good deal. She felt worthless and guilty, and had some suicidal thoughts. When seen in consultation in November of 1960 she presented the picture of a marked agitated depression. A trial on imipramine anti-depressant medication administered by her family doctor had not been helpful. Her history revealed that in 1950 she had had a similar depressive

illness which responded well to electroshock therapy, and since then she had remained free of psychiatric difficulty until the beginning of her present depression.

In hospital, following consultation with the surgeon who had performed the vascular surgery, it was decided to institute a course of electroshock treatment, and 8 of these, with induction of a convulsion in each, were given in the usual manner. Each electroshock treatment was preceded by the intravenous administration of 0.2 gm. of sodium pentothal and 40 mg. of succinylcholine chloride; 0.6 mg. of atropine was also given before each treatment. The patient also received 100 mg. of imipramine each day.

She recovered from her depression, and at time of discharge from the hospital was a cheerful, active and gregarious person. No complications or abnormalities occurred during the electroshock treatment. The patient has been seen in follow-up visits and she continues to do well.

Vascular grafts can rupture at a later date, though the types of defects or stress which lead to rupture are not known(5). This complication following electroshock treatment in such patients has not been reported.

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IMIPRAMINE HYDROCHLORIDE¹ IN THE TREATMENT OF NARCOLEPSY—A CASE REPORT

ROBERT E. PECK, M.D.²

Narcolepsy is a condition rarely seen by the average physician. The present case is reported because it responded to imipramine in what appears to be a specific way.

It is hoped that other practitioners may wish to test this drug on their own cases.

The patient is a 25-year-old white male, somewhat overweight, but not otherwise abnormal physically or neurologically. An examining psychologist described him as having oral-dependent characteristics but not definitely

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neurotic. He had suffered since the age of 15 from spells of uncontrollable sleepiness preceded by an aura of tinnitus, floating, or numbness, and waking spontaneously after 3 to 10 minutes refreshed. There were a few instances of automatisms during the attacks and several episodes of hallucinations after. Attacks occurred at least once a day. There were also frequent attacks of cataplexy in which he would suddenly become weak and collapse helplessly. These were precipitated by laughing and occurred earlier than the narcolepsy; he remembers his friends teasing him as a boy in order to precipitate them.

In spite of his disability he had developed fairly normally and made a good adjustment. He had served in the army and his condition had gone undetected until he himself brought it to the attention of the authorities in order to avoid a detail wherein he would have had to drive a number of men home from a dance. He was hospitalized briefly, received an EEG which was normal, and discharged from the hospital. Presumably his condition was not considered serious as he received no change in duty status and did not receive a medical discharge from the army. He entered the nightclub business with his brother and has been moderately successful and enjoys his work. He is quite ambitious. He is happily married to a registered nurse and adjusts normally sexually.

He had previously been treated successively with amphetamine 20 mg. per day and methylphenidate up to 80 mg. per day. He improved temporarily on each, but always developed a tolerance to these drugs. He had also been treated unsuccessfully for a time by a psychologist with psychotherapy.

When he first came to me a year ago I treated him with psychotherapy but there was little anxiety or pathology to work with and this proved unrewarding. I then attempted hypnosis(2), but, though cooperative, he was not a good subject and I was

unsuccessful. Knowing that the usual sympathicomimetics were only of temporary help, I suggested to him that we try some of the antidepressants that had recently appeared. Accordingly he was placed on imipramine in gradually increasing doses up to 150 mg. a day. Within 2 weeks he was completely free of narcolepsy and remained so. He became much freer and would venture things he wouldn't have previously such as long auto drives. He has never shown any tendency to develop a tolerance to imipramine as he had to the other drugs. It must be emphasized however that his attacks of cataplexy have been completely untouched by the imipramine.

After several months of relief from imipramine, I arranged for his wife to substitute placebos in place of the pills. After a week the attacks recurred and continued until he went back to the regular drug. The experiment was repeated again later with similar results. Last April he was placed on phenacemide(1) and stayed on this 2 weeks, but his narcolepsy returned and he discontinued it. He then dropped out of treatment and treated himself. He stayed on 50 mg. imipramine a day and was symptom-free. During the month of May he had no narcoleptic attacks and took no medication. In June they recurred and he went back on 50 mg. for a week. He has had neither pills nor attacks since. At my request he returned for a follow-up visit, he is doing and feeling well and is quite happy about the treatment.

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ACUTE TOXIC PSYCHOSIS CONCURRENT WITH PHENOTHIAZINE THERAPY

ALBERT W. LANG, M.D., AND ROBERT A. MOORE, M.D.¹

Although the literature is replete with reports of various untoward reactions to

phenothiazine therapy, including neurotoxic manifestations, there are few reports of the development of an acute toxic psychosis. Kinross-Wright(1) and Ayd(2) report on

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chronic psychotic patients receiving large doses of chlorpromazine. May(3) describes two cases of catatonic-like states in acutely schizophrenic patients, one receiving small doses of chlorpromazine and prochlorperazine, and the other receiving large dosages of prochlorperazine. Berry(4) observed two cases of cataleptoid states in children associated with perphenazine therapy.

The patient is a 27-year-old white married office clerk, father of two children, admitted to the Veterans' Readjustment Center, of the University of Michigan Medical Center, complaining of anxiety, dizziness, palpitations, and the fear that he would be unable to breathe or that his heart would stop. These symptoms had appeared 3 years previously after the birth of his first child and following the observation of a heart attack in an elderly man. His complaints were intermittent but progressively disabling prior to admission.

On admission the patient was tense, somatically preoccupied, lacking in insight, but did not reveal overt psychotic or organic symptoms. On psychological tests, early signs of ego disorganization were seen in an overall picture of a passive-dependent personality. Physical and neurological examinations and laboratory studies were negative.

After 23 days in the hospital with psychotherapy thrice weekly, it was found the patient had been unable to participate beyond repetition of concrete fact of his life. At staff conference an opinion of incipient schizophrenia was given. The patient was then started on chlorpromazine, 25 mgm. q.i.d.

Following 3 doses (total, 75 mgm.) he was in panic, complaining of palpitations; pulse was 170 per minute. He subsequently complained of "feeling like an empty shell, floating around in the air." Following a night's sleep, induced by secobarbital 200 mgm. the chlorpromazine was increased to 50 mgm. q.i.d. After 2 doses, the patient experienced auditory hallucinations which he felt emanated from 2 small men standing on his chest. During the next 2 days, he showed progressive deterioration with increasing drowsiness, dysarthria, dysphagia and weakness. Chlorpromazine was discontinued and trifluoperazine 2 mgm. q.i.d. was commenced. After 2 more days of continued confusion and panic, the patient disappeared from the hospital. Upon return 8 hours later he ex-

pressed delusions, complained of depersonalization and auditory hallucinations and showed a marked increase in dysarthria, dysphagia, diplopia, ataxia and coarse tremors. He again absconded from the hospital before further evaluation was possible. He had received 725 mgm. of chlorpromazine over a 5-day period and 22 mgm. of trifluoperazine during an additional 3 days.

He was admitted to a nearby general hospital(5) where treatment included intravenous Amigen in 5% glucose, multivitamins, potassium, promethazine 25 mgm. the first night for sleep, and dilantin and phenobarbital for his severe tremors. Recovery was complete in 7 days and he was able to return to work.

The patient was seen briefly by one of the authors (AWL) 6 days after leaving the general hospital and 11 days after leaving Veterans' Readjustment Center. He was somewhat tense, anxious to collect his belongings, rather critical of his treatment, but revealed no psychotic or organic symptoms beyond a patchy amnesia for part of the psychotic episode. He was unwilling to submit to further examination.

This case history reports development of an acute psychotic episode a day after chlorpromazine therapy was begun at 25 mgm. q.i.d. Although there was suggestion of an incipient schizophrenic process before this, the acute psychotic episode was more clearly toxic with definite neurological findings. This opinion was strengthened by the loss of symptoms after cessation of phenothiazine therapy. We believe that chlorpromazine was the responsible agent rather than the trifluoperazine. One 25 mgm. dose of promethazine did not cause any return of symptoms. This case differs from others reported as this patient was not overtly psychotic previous to phenothiazine therapy and received relatively small dosage.

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HISTORICAL NOTES

PREDECESSORS OF MORTON PRINCE'S DISSOCIATION CONCEPT

ERNEST HARMS¹

In his short biography of him, Merrill Moore justifiably designates Morton Prince as America's most highly reputed psychiatrist. This reputation rests mainly on the wide acknowledgment accorded Prince's studies on the dissociation of personality or double personality and consciousness. This work placed Prince next to Kraepelin and Bleuler in laying the ground for the study of schizophrenia, the somatological work of which during the past 50 years has hardly advanced beyond what was accomplished by these 3 men.

The main point of Prince's study was that the usual normal unified consciousness of the personality can "disintegrate so that a second personality may come into being, designatable as 'double,'" and that this second consciousness may alternate with the first. This falling into parts of the unified consciousness is a pathology. Prince's merit is considered to lie in the fact that he was the first to describe this aspect of the somatology of schizophrenia, or dementia praecox.

The historian who turns over the literature of the past carefully, frequently finds that such "firsts" have predecessors who in full or nuclear form presented the facts now considered "new" or who speculated about them. Of those who anticipated Prince in the area of the so-called "double-consciousness" the most impressive were two British physicians of the 1840's, Sir Henry Holland and Dr. Arthur Ladbrooke Wigan.

Holland, a fashionable court physician of his time, presented, in his *Medical Notes and Reflections* (1842), which appeared in many editions, a chapter on "The Brain as a Double Organ," in which he expressed vexation about the functioning of the two cerebral hemispheres. He speculated that "aberrations of the mind called insanity may be due to incongruous action of this double structure. In consequence there could be

two states of consciousness side by side or following one another according to changes of conditions." He pointed to cases of hysteria in which there have appeared "two minds" and "a sort of double dealing with oneself." He considered the term "double consciousness" for such states permissible, and he referred to a case reported by Herbert Mayo in his *Outlines of Human Physiology* (1837) in which a case history was presented that is almost identical with Morton Prince's "Miss Beauchamp," a girl who experienced "fits" lasting up to 3 days, from which she "awakened" as a different person, not remembering the previous state.

A more impressive presentation of earlier observations of "dual consciousness" came from a contemporary and countryman of Holland, Arthur Ladbrooke Wigan. History has treated this important man rather strangely. Although referred to in contemporary literature as ingenious and celebrated, nothing about his life has come down to us, except the date of his death, December 7, 1847. Dr. Wigan wrote 2 books, several pamphlets, and numerous letters to *The Lancet*. His major book, which was much discussed for several years a century ago, was entitled *Duality of the Mind* (1844). In it he tried to prove the thesis that the two hemispheres of the brain are two completely separate organs functioning independently side by side, whose collaborating function resemble somewhat that of the eyes, giving self-control and security to man's mental functioning. Most mental diseases, Dr. Wigan believed, resulted from the non-functioning of one or both of the cerebral hemispheres or their malfunctioning or contradictory activity. Wigan elaborated this idea for most of the neurology and neuropsychiatry of his day. In some of his keen speculations he reached far beyond his time and into the basic concepts of the present century. He had astonishing foresight of later insights into the constitution of the nervous system. He says :

¹ 158 East 95th Street, New York City.

The right brain (i.e., the right hemisphere) has no command over the right leg nor the left brain (left hemisphere) over the left leg; whenever the right brain is paralyzed, there is no power whatsoever to move the left limb, yet the left brain moves the right as well as ever—consequently, the brains (the right and the left hemispheres) are capable of independent action . . . I hope that I have proved a great many things besides the alternate influence of the two brains on muscular motion.

Among Wigan's amazing observations is the first actual inductive description of the schizophrenic thought process, which he presents in 4 pages, and from which I quote a brief passage: "Bring the tea—tea comes from China—wall of China—wall, mur, mur-aille—difference in French—French habits—habit, coat, long-tailed coat for soldiers—jackets . . ." This certainly seems identical with Bleuler's "first" descriptions.

Probably the most impressive reach of Wigan's thought into 20th century psychiatry is his anticipation of Prince's dissociation concept, shown in the following passage:

We have examples of persons who from some hitherto unexplained cause, fall suddenly into, and remain for a time, in a state of existence resembling somnambulism, from which, after many hours, they gradually awake—having no recollection of anything that has occurred in the preceding state—although, during its continuance they had read, written and conversed, and done many other acts implying an exercise, however limited, of the understanding . . . They now pursue their ordinary business and avocations in the usual manner, perhaps for weeks, when suddenly the somnambulist

state recurs, during which, all that had happened in the previous attack comes vividly before them, and they remember it as perfectly as if that disordered state were the regular habitual mode of existence of the individual—the healthy state and its events being now as entirely forgotten, as were the disordered ones during the healthy state. Thus it passes on for many months, or even years. This is what is called *double consciousness*—the person being in a manner 2 individuals, as far as sensation and sense of personal identity are concerned.

Besides the dual state which Wigan designated as somnambulist, he further described one in which a falling into an infantile state alternated with adult consciousness, a form seldom reported but probably not too rare in our time.

There are of course basic divergences between the theoretical concepts that Dr. Wigan applied to his cases and what modern academic neurology and psychiatry cherishes. There are naturally also basic differences in theories and conclusions as between Wigan and Morton Prince. This is to be expected. The astonishing thing is the manner in which the facts were observed and presented as early as prior to the mid 1800's, and this certainly deserves to be lifted out of the forgotten past and brought to historical acknowledgment. The historian may of course also be puzzled by the fact that the life and work of such an outstanding scientist as Arthur Ladbroke Wigan has been lost in the past, but this is a riddle we shall hardly be able to solve.

THE PRESIDENT'S PAGE

Our Editor has asked if, before my term of office expires, I would comment on what has seemed of greatest significance to me in the past year.

Manifestly, in a fleeting year, the President primarily presides over dynamic movements that were set in motion long before he took office and which will remain in motion long after he leaves. He may play some part in tilting a few of these movements in slightly different directions, or perhaps add an ingredient that changes them slightly qualitatively. He may even set a new project or two in motion, but how successfully he will not know until long after his term is over.

Nearly every President, however, has at least one or two special concerns that he seeks to advance as best he can while in office. One of mine has been to find ways of assuring an ever-more vigorous and effective functioning of APA Committees; and to this end, a few ideas have been set in motion that one may hope will develop further under my successors.

There are at least eight essential ingredients characteristic of effective committee functioning.

First, there must be an efficient mechanism for appointing committee members. In many professional associations, including our own, such appointments are made by the President. This is a function which requires serious thought, since the number of committee vacancies which occur each year are limited and qualified members are many. In appointing a committee member, any President will ask such questions as these: How knowledgeable is he in the area of the committee's concern? How much interest has he demonstrated in the Association's affairs? Has he advanced to Fellowship status? If he is a relatively new member, does he show promise which should be developed through committee appointment? Does he offer special insights or points of view that will enrich the representativeness of the committee? Does he work well with a group? Sometimes it is important to ask where he comes from,

since geographical representation must also be considered. Naturally, in making appointments, a President will consult with as many people as he can. In recent years, since the advent of the District Branches, they have been asked for recommendations. Perhaps there is a better way of selecting committee members, but, if so, no one has come up with it.

Second, every committee must have a reasonably well defined mission and the morale to carry it out. That these qualities are abundantly present in APA committees has been demonstrated time and again. This year, for example, all committees were asked to define their mission and none had any trouble in doing so.

Third, committees must have sufficient funds to enable them to meet as often as is necessary to accomplish this mission, and to bring consultants to their meetings if need be. As matters now stand, the budget will allow committees to meet regularly only once a year with expenses paid, and rarely are funds available for consultants. It will be a productive day when funds will be available to support an adequate number of meetings to enable the committees to do what they should do and are so capable of doing.

Fourth, communication must be "easy" among the different committees on matters of mutual or overlapping concern and between the committees and the Council. It is in this area that perhaps our most troublesome problems arise. Inter-communication among the committees has been tremendously facilitated over recent years by having all committees meet simultaneously in the fall, and by placing the three Coordinating Chairmen in a position to be aware of overlapping interests and to represent the committees before the Council.

The truly troublesome problem is the lack of time that Council has available at its meetings to devote to committee concerns. With each passing year the agendas of Council grow more and more burdensome, and all too often committee reports and recommendations cannot be given the

thoughtful consideration they deserve. Two suggestions have been made this year which may contribute to the problem.

I have suggested that Council appoint a "Reference Committee" comprising the three Coordinating Chairmen and, perhaps, one or two others, with the Medical Director and others in the Central Office serving them in a staff capacity. This Reference Committee would, in effect, serve as a kind of screening agency for the Council. That is, it would meet in advance of and be prepared to advise the Council on referring various agenda items to the proper committees concerned and to recommend appropriate action on matters referred to it by Council. A second suggestion has come from the Medical Director, that Council add an extra day to its traditional two-day meetings, a day that would be devoted entirely to the consideration of committee affairs. It is to be hoped that both of these suggestions will be given every consideration.

Fifth, there must be adequate professional and technical staff support for the entire committee structure. Under professional direction, the Central Office, as our communications center, can keep committees informed of developments that concern them. It can often do some of their spade work, such as bibliographical research or the preparation of background material. It can apprise a committee of overlapping interests with other committees, and help to avoid duplication of effort. It can inform committees of policies and procedures. It can render them all manner of staff support such as typing, mailing, mimeographing, printing, fund raising, arranging for meetings, and the many other chores entailed in the production of reports. Under this heading, great headway has been made this year by the Medical Director who has streamlined administrative procedures in the Central Office to render more of this kind of support to the Committees. Especially auspicious is the addition of an Assistant Medical Director to the staff who, with adequate secretarial support, will devote much of his time to meeting the administrative needs of the committees.

Sixth, there must be a facility for the publication of worthwhile committee reports. This, too, is in part a budget problem.

Printing, editorial processing and distribution is expensive. The Central Office, within budget limitations, has done the best it could to publish as many committee documents as possible. But it is one thing to publish a document which has sufficient audience appeal to pay for itself through sales, and quite another thing to publish one which, while equally worthwhile, has a much smaller sales potential. Manifestly, there is little incentive to produce a document if it cannot be published and distributed. Here again, more thought must be given to how the publication of committee reports may be financed.

Seven, there needs to be a training ground for future committee members. The most promising source of future national committee members lies in the District Branches which tend to form committees along lines that parallel the national structure. Just as Presidents consult with Branch officers on outstanding candidates for APA Committee appointments, the development of closer working relationships between the national committees and their Branch counterparts will bring to light many a promising candidate. Moreover, the Council has, this year, approved the formation of "Task Forces" to accomplish certain special projects that cannot be reasonably assigned to an existing committee in addition to its present concerns. Such Task Forces would be directed by a committee as a rule, but would rely on other personnel, including, on occasion, persons from outside the Association, to accomplish its assignment. These Task Forces may also elicit candidates for future committee work.

The *eighth* requirement is more elusive. It has to do with the attitude of the membership at large about the leadership role that the Association is to play. Such a role is most clearly implicit in the stated objectives of the Association which cannot be repeated too often:—to advance standards to treatment and care for the mentally ill; to make psychiatric services available to all who need them; to further psychiatric education and research; and to extend psychiatric knowledge to other professions and to the public generally, working toward the common goal—the ultimate prevention of mental illness.

It is in this leadership context that I have recommended that the Association should have more "opinions" about matters that are of fundamental concern to the profession and to which the profession can make a *special* contribution. Using the word loosely, such "opinions" may take the form of a precautionary statement on the irresponsible use of psychoactive drugs or hypnosis, a set of propositions about the best methods of educating family physicians in psychiatry, a stand on ways and means of overcoming the manpower shortage, or on any of many other pertinent questions about which we are daily asked as the organization logically held to be the authority in our field.

Such opinions must be formulated not with the thought that they represent the precise views of every member of the Association (manifestly impossible), but rather as thoughtful judgments reflective of pre-

dominant trends in current professional thinking. They should be published in the spirit of providing helpful information and guidance for all concerned, rather than as "official edicts."

If such opinions are framed in the committees, and brought to a fine polish in the machinery of inter-committee deliberations and final clearance through the Council, one may have confidence that they will reflect predominant thought within the progression.

So much for a major concern of your President this past year. Next month the mantle of office will fall on the sturdy shoulders of Dr. Walter Barton. All success to him; he richly merits the enthusiastic support of each of us.

R. H. FELIX, M.D.,
President

CORRESPONDENCE

CRITICISM OF REVISED PSYCHOPHARMACOLOGICAL SURVEY

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY :

SIR : A useful survey of psychopharmacological agents was recently published under the head of Clinical Notes in your *Journal*.¹ There are, however, a few criticisms which I would make.

1. Chlorpromazine is given an effectuality rating of "Good-1" whereas triflupromazine is given a rating of "Fair-2." Yet triflupromazine is described as being more potent and perhaps more rapid-acting than chlorpromazine. This seems to be contradictory. 2. None of the other phenothiazine drugs are given an effectuality rating better than 2 whereas it might be the experience

of the majority of psychiatrists that some of the newer phenothiazines are as effective as or are more effective than chlorpromazine. 3. The anti-psychotic action of some of the major tranquilizers is not limited to a suppression of hallucinations and delusions. Other effects such as improvement in the patient's contact with reality are also important and might have been mentioned. 4. To include toxicity and side-effects under one scale is apt to be misleading. It would have been better to have separate scales for dangerous toxic reactions and comparatively harmless side-effects. 5. The tendency for chlorpromazine like *Rauwolfia* to increase depression might have been mentioned.

R. B. Davis, M. B., D.P.M.,
Kishore Nursing Home,
Ranchi, India.

¹ James P. Cattell, M.D., and Sidney Malitz, M. D. : *Am. J. Psychiat.*, 117 : 449, 1960.

REPLY TO THE FOREGOING

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY :

SIR : We appreciate Dr. Davis' interest in the drug survey to which he refers and comment on his criticisms in the order he has presented them. 1. The "potency" of a drug usually connotes the dosage range in which therapeutic effect or physiological change are clinically observable. Triflupromazine is thus more "potent" in that the dosage range is 10-30 mg. t.i.d.—in contrast to chlorpromazine : 25-150 mg. q.i.d. Our experience, and that of our associates, has led us to conclude that chlorpromazine is the more effectual drug. 2. The experiences of the majority of psychiatrists about the effectuality of some of the newer phenothiazine derivatives have not been reported. Chlorpromazine has been administered to more patients for longer periods of time with definite benefit, according to a significant minority of psychiatrists' reports. We hope that some of the more recent derivatives will prove to be safer and more effectual and are seeking evidence to demonstrate this. 3. A brief survey of this type can-

not include a comprehensive list of all psychotic symptoms and how they are affected by each drug. The scientific literature and the pharmaceutical house advertisements devote much attention to such issues. In preparing this survey, we wished to provide a concise evaluation of the effectuality and side effects of these psychopharmacological agents, on the basis of our experience and the literature, for ready reference for anyone who might be interested. 4. We agree that there would be merit in listing toxic reactions and side reactions separately, perhaps with different rating systems. This would certainly be in order were this simple survey to be expanded into a comprehensive monograph, as would the inclusion of many other topics including those mentioned under 3. 5. Depression is mentioned as a side effect of chlorpromazine administration in column 2, line 5 of the survey.

James P. Cattell, M.D.,
Dept. of Psychiatry,
Columbia-Presbyterian Medical Center,
New York City.

BOOK REVIEWS AND REVIEWERS

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY :

SIR : In the *American Journal of Psychiatry*, vol. 117, Aug., 1960, is a review signed by Hans A. Illing, Ph.D., Los Angeles, California, which calls for a reply. The review is of *Das Menschenbild der Seelenheilkunde* by Viktor E. Frankl (Stuttgart : Hippokrates Verlag, 1959).

No reviewer is required to agree with the author he reviews, but surely we may expect him to understand the author and to quote him accurately. Otherwise confusion is the only outcome. Dr. Illing cites only 2 items from Frankl's book, which appear on pages 108 and 109. Each of these citations is erroneous. The first is quoted from Ludwig Zeise, but made to read as if from Frankl. Taken out of context the implication

is a total rejection of Freud, but elsewhere in the book Frankl refers to Freud as the great pioneer of whose genius we are all convinced.

The second error is equally misleading as Dr. Illing takes parts of a sentence to mean precisely the opposite of what Frankl actually says. Instead of saying "the mass neuroses of mankind cannot be resolved," as the reviewer has it, Frankl says that "the collective neuroses of mankind cannot be resolved unless freedom and responsibility are appealed to."

I hope that you will bring these needed corrections to the attention of your readers.

Paul E. Johnson,
Professor, Boston University,
Boston, Mass.

REPLY TO THE FOREGOING

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY :

SIR : Professor Johnson remarks aptly that my quotation "quoted from Ludwig Zeise" was "made to read as if from Frankl." This was not intended by me, nor did I wish to insinuate that Frankl "rejects Freud." Likewise, my second quotation was taken "out of context," although it can be argued that my omission of the last portion of my quotation "unless freedom and responsibility are appealed to," was not done so inadvertently since I believe Frankl holds that freedom and responsibility are appealed to *in vain*.

In my attempts to present to the English-speaking psychiatrist all-too-short reviews of current German Psychiatria, I may sometimes fall short of avoiding errors, particularly in regard to translations, since the matter of semantics is ever present, I hope Professor Johnson will bear with me, especially since I have given Dr. Frankl credit on many other occasions in the pages of this *Journal*, with particular reference to Frankl's co-editorship of the *Handbuch der Neurosenlehre und Psychotherapie*.

Hans A. Illing, Ph.D.
Los Angeles, Calif.

VERITAS

The true means the verified and means nothing else.

—JOHN DEWEY

OFFICIAL REPORTS

REPORT OF THE NOMINATING COMMITTEE

The following candidates have been nominated for election for the year 1961-1962.

President-Elect : S. H. Hardin Branch, Salt Lake City, Utah.

Vice-President : Henry Brosin, Pittsburgh, Pa.

Vice-President : Titus Harris, Galveston, Tex.

Secretary : Harvey Tomkins, New York, N. Y.

Treasurer : Addison M. Duval, Jefferson City, Mo.

Councillors (3 to be elected from 6 nominees) :

Robert Garber, Belle Mead, N. J.

Cecil Wittson, Omaha, Neb.

Francis J. O'Neill, Central Islip, N. Y.

Zigmond Lebensohn, Washington, D. C.

Alfred Auerbach, San Francisco, Calif.

Herbert S. Ripley, Jr., Seattle, Wash.

NO HOLY WARS FOR THEM

States strong enough to do good are but few,
Their number would seem limited to three.
Good is a thing that they the great can do,
But puny little states can only be.
And being good for these means standing by
To watch a war in nominal alliance,
And when it's over watch the world's supply
Get parceled out among the winning giants.
God, have you taken cognizance of this ?
And what on this is your divine position ?
Most nations like the Cuban and the Swiss
Can never hope to wage a Global Mission.
No Holy Wars for them. The most the small
Can ever give us is a nuisance brawl.

—ROBERT FROST

MYSTICISM VS. REASON

I have always instinctively dreaded mysticism (although fascinated by it) as endangering the light of reason—a poor light, nearly always smoking, and often stinking, but yet all we have to let us go forward a few feet in a century toward a positive, materially better world, opening out greater possibilities of genuine and not merely ecstatically illusive states of euphoria.

—BERNARD BERENSEN

NEWS AND NOTES

DES MOINES CHILD GUIDANCE CENTER SALARY SURVEY.—Now available is the 1960 Salary Survey prepared by the Des Moines Child Guidance Center. This is a survey of salaries offered to various professions in mental health facilities. These facilities were selected on the basis of staff including at least one psychiatrist, one clinical psychologist, and one psychiatric social worker. In 1958, survey questionnaires were mailed to all outpatient and inpatient health facilities listed in available directories as having a staff including at least one full-time person in each of the 3 professions. The 1960 questionnaire is essentially identical with that of 1958, the information included being obtained from 546 organizations.

This booklet is available from the Des Moines Child Guidance Center, 1206 Pleasant Street, Des Moines 14, Iowa, at 35 cents per copy, or 25 cents for 10 or more copies.

AMERICAN ASSOCIATION OF MARRIAGE COUNSELORS.—The annual meeting of the National Council on Family Relations will be held August 23-25, 1961, at the University of Utah, Salt Lake City.

For further information write Ruth Jewson, Executive Secretary, National Council on Family Relations, 1219 University Ave. S.E., Minneapolis 14, Minn.

THIRD WORLD CONGRESS OF PSYCHIATRY.—Among the features of the 3rd World Congress to be held in Montreal, Canada, June 4-10, 1961, will be a panel, chaired by Dr. Robert H. Felix, comprising authorities from countries in which national psychiatric programs have been particularly well developed. This panel will deal with problems of organizing mental hospitals, psychiatric divisions in general hospitals and departments of psychiatry in universities, community health services and clinics, school and child guidance clinics, industrial mental health clinics, research laboratories and other facilities. A series of advance sessions will be chaired by Professor Jean Delay of Paris.

The 3rd World Congress, sponsored by the Canadian Psychiatric Association and McGill University, will provide the first opportunity since 1950, when the first Congress was held in Paris, for psychiatrists from all over the world to meet together. It is expected to attract over 3,000 psychiatrists from 62 nations. There will be 9 plenary and 31 major panel discussions during the week. Simultaneous translations will be provided in the 4 official languages of the Congress—English, French, German, and Spanish. More than 400 scientific papers are listed.

Information on registration and travel may be obtained from World Congress of Psychiatry, Allan Memorial Institute, 1025 Pine Ave. W., Montreal 2, Canada.

DAVID C. WILSON LECTURE IN PSYCHIATRY, UNIVERSITY OF VIRGINIA.—The 3rd annual David C. Wilson Lecture will be given by Dr. William B. Terhune at the University of Virginia School of Medicine, Charlottesville, Va., April 21, 1961.

THE FORT LOGAN MENTAL HEALTH CENTER.—This Center had its groundbreaking ceremony Feb. 3. The new hospital, a part of the Colorado State System, will accept its first patients by the end of 1961.

The program planned for the Center envisions an institution which is closely integrated with local mental health clinics, through which patients will come to the hospital and which will also provide after-care and follow-up services. Team members of all professional disciplines will offer intensive treatment to patients, maintain liaison with the local clinics and provide them with professional resources. Training and research programs are also planned for the future.

NEW POSITION OF TRAINING AIDE IN SCHOOLS FOR MENTALLY RETARDED.—Establishment of a new position of training aide in the state schools for the mentally retarded has been announced by Dr. Arthur

W. Pense, Deputy Commissioner of Mental Hygiene (New York State) in charge of the Office of Mental Retardation.

The first group of aides will receive special training at Willowbrook State School (Staten Island) in teaching methods and theory, and practical teaching experience in classrooms there. The first class is expected to open March 13, 1961, and will be conducted by Charles McAllister, Director of Mental Hygiene Education Services.

Qualifications for the position are permanent employment as an attendant with at least 6 month's experience in an institution for the mentally defective, high school graduation or an equivalent diploma, and ability to relate with children and to organize children's activities.

For information call Mrs. Margaret M. Farrar, Albany HObart 2-7511, Ext. 5561.

STATEMENT ON MEDICAL ASSISTANCE FOR THE AGED.—A Statement titled "Medical Assistance for the Aged and Nursing Services in the Home" has been prepared by the U. S. Department of Health, Education, and Welfare in cooperation with the Division of Program Standards and Development, Bureau of Public Assistance, Social Security Administration.

This statement was designed primarily to assist States develop plans for home nursing care under Medical Assistance for the Aged programs. It includes such information as the types of services to be provided, the availability and development of home nursing services, and inter-agency and inter-group relationships.

Single copies of this statement can be obtained from the U. S. Department of Health, Education, and Welfare, Public Health Service—Division of Nursing, Washington 25, D. C.

DOCTORS ROSS AND KAPP HONORED.—The 1960 Franz Alexander Prize of the Chicago Institute for Psychoanalysis was awarded on January 25, 1961, to Dr. W. Donald Ross and Dr. Frederic T. Kapp, Associate Professors of Psychiatry at the University of Cincinnati, for their paper on "A Technique for Self-Analysis of Countertransference."

The paper is part of the long-term examination by the therapists of their own passing emotional responses to the material of hours of psychotherapy. The technique makes use of a study by the analyst of his own visual imagery as he listens to the report of dreams and other psychological material discussed by the patient during an hour of psychotherapy.

RESEARCH TRAINING IN MENTAL HEALTH AT HARVARD.—The Harvard Medical School and the Massachusetts Mental Health Center announce the second year of a post-doctoral training program in mental health research beginning July, 1961. The objective is to provide an intensive research experience in a specific mental health field.

Trainees will be expected to spend most of their time working on a specified research project in one of the participating laboratories—neurophysiology, neuropsychology, biochemistry, psychophysiology, psychopharmacology, sociopsychology, and clinical psychiatry. Stipends of \$6000 for the first year and \$7000 for a desired second year are provided.

For further information write Milton Greenblatt, M.D., Director of the Program, or Elliott G. Mishler, Ph.D., Assistant Director, at 74 Fenwood Road, Boston 15, Mass.

GRADUATE COURSE IN CRIMINOLOGY, UNIVERSITY OF CAMBRIDGE.—The University of Cambridge has established a Graduate Course in Criminology, to be given by the Institute of Criminology, and leading to a diploma beginning in 1961. Each year the course will extend from October to July.

The program will include 105 lectures and 90 seminars dealing with all the major aspects of criminology, criminal law and procedure. Individual work will be required at the seminars.

Instruction will be given by the Wolfson Professor of Criminology, the staff, visiting lecturers, and experts from the Home Office.

Application forms for admission to the course are available from the Secretary, Institute of Criminology, 4 Scroope Terrace, Cambridge, England, and should reach the Secretary by May 15, 1961, for the course commencing in October.

NORTH PACIFIC SOCIETY OF NEUROLOGY AND PSYCHIATRY.—The North Pacific Society in conjunction with the Northwest District Branch of the American Psychiatric Association will hold its annual scientific meeting at Harrison Hot Springs in British Columbia on April 7 and 8, 1961.

Guest speakers will be Dr. David T. Graham, Associate Professor of Medicine at the University of Wisconsin, and Dr. Earl Walker, Professor of Neurosurgery at the Johns Hopkins University.

ASOCIACION PSIQUIATRICA PERUNA.—At the general assembly of this Association, June 2, 1960, the following officers were elected for the biennial period 1960-62: President, Dr. Baltazar Caravedo C.; Vice-President, Dr. Arnaldo Cano; General Secretary, Dr. José Sánchez García; Executive Secretary, Dr. Renato Castro de la Matta; and Treasurer, Dr. Elsa Felipa.

A. E. BENNETT AWARD.—The Society of Biological Psychiatry is offering an annual award made possible by the A. E. Bennett Neuropsychiatric Research Foundation. The award will consist of \$500, part of which is to be used for traveling expenses to the annual meeting. It will preferably be given to a fairly young investigator and not necessarily a member of the Society of Biological Psychiatry, for work recently accomplished and not published. The paper will be read as part of the program of the annual meeting of the Society and will be published with the other papers read at that meeting in the book: **BIOLOGICAL PSYCHIATRY**, Volume IV. The honorarium will be awarded at the annual banquet.

Please submit paper in quadruplicate to Harold E. Himwich, M.D., Chairman, Committee of Award, Galesburg State Research Hospital, Galesburg, Illinois. Deadline for manuscripts is April 30, 1961.

AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY, INC.—Certified in Child Psychiatry, February, 1961, were the following:

William B. Beach, Jr., M.D., Sacramento, Calif.
Charles L. Block, M.D., Skokie, Ill.
Robert Gabriel Carlson, M.D., Denver, Col.
Robert M. Counts, M.D., Easton, N. J.
Martin B. Fliegel, M.D., Ann Arbor, Mich.

Charles H. Kramer, M.D., Oak Park, Ill.
Nancy Rollins, M.D., Kansas City, Kan.
Sidney Lee Werkman, A.B., M.D., Washington, D. C.

ACADEMY OF PSYCHOANALYSIS.—The Annual Meeting of the Academy will be held at the La Salle Hotel, Chicago, May 6 and 7, 1961. The theme of this meeting is Psychoanalytic Education. Dr. Frances S. Arkin will deliver the presidential address.

The First Frieda Fromm-Reichmann Award will be presented at the luncheon meeting on May 6 and a citation to Stanley Cobb will be presented at the luncheon meeting, May 7.

Inquiries may be addressed to the Secretary, Dr. Joseph H. Merin, The Academy of Psychoanalysis, 125 East Street, New York 21, N. Y.

THE SANDOR RADO LECTURES.—David M. Levy of New York City will deliver the fifth annual Sandor Rado Lectures at the Columbia University Psychoanalytic Clinic for Training and Research on April 14 and 15 at 9 p.m. and 9 a.m. respectively. His presentations will be entitled "The Incomplete Act."

THE LONDON CONFERENCE ON THE SCIENTIFIC STUDY OF MENTAL DEFICIENCY.—On July 25, 1960, the London Conference on the Scientific Study of Mental Deficiency convened. It was the realization of an objective held for the past 15 years by the officers and members of the Royal Medico-Psychological Association of Great Britain and the American Association on Mental Deficiency. With approximately 700 registrants representing some 40 countries, it was the first international multidisciplinary conference on mental deficiency ever held. Interest of the registrants ranged from that of the parent of a retarded child to that of the highly trained research worker.

It was a conference of highlights. The first was the excellent operational plan developed. Each morning the conference met in plenary session followed by sectional meetings in the afternoon for consideration of special interests relating to the retarded. The excellence of the program itself was another highlight. The scientific papers ranged from reports on highly technical re-

searches in body metabolism and human genetics, medicine, psychology, education, social work, to community planning for the retarded. It was truly comprehensive coverage. This diversity served to sustain a high level of interest and enthusiasm throughout the week.

A special session was held Wednesday, July 27, to consider the formation of a permanent International Association on Mental Deficiency. This was voted unanimously as was a recommendation to plan for a second international conference to be held in the near future. Dr. Alexander Shapiro, consultant psychiatrist to Harpersbury Hospital, St. Albans, Hertfordshire, England, and Mr. Harvey Stevens, Superintendent, Central Wisconsin Colony and Training School, Madison, Wisconsin, were designated provisional co-chairmen to develop the proposed plans.

The cordial receptions arranged by the London County Council and the National Ministry of Health were further highlights of the week. These were added to by the official reception and conference dinner held Thursday evening, July 28. Observing an official British toastmaster in action was a

new and unique experience for many of us from the United States.

Perhaps the most impressive feature of the entire conference was the spirit which prevailed. The cohesive force which dominated the week seemed to stem from the dedication of everyone, regardless of national origins, specialty interests or training background, to find jointly solutions to the stubborn problems presented by the retarded population of the world.

While the American Psychiatric Association was represented by a delegate, and other members also attended, it had no part in the planning of the conference. The Association has had an interest in this area of medicine for many years. It would do well to join forces with the other agencies and organizations supporting international developments in mental retardation.

Proceedings of the Conference are being published and will be available after January 1, 1961.

Reynold A. Jensen, M.D.,
Department of Psychiatry and Neurology,
University of Minnesota Medical School,
Minneapolis 14, Minn.

BOOK REVIEWS

HUMAN DEVELOPMENT: SELECTED READINGS.

Edited by Morris L. and Natali R. Haimowitz. (New York: Thomas Y. Crowell Company, 1960, pp. 799, including Index.)

This is an anthology of 80 passages of different length and import, centered around the broad theme of human development. The editors declare in the preface that, in selecting materials, they were guided by the following questions: "What kind of children do we want? What readings in science, philosophy, or fiction eloquently describe the nature of infants and children? How can this knowledge be applied to help children grow?"

The selected items are grouped into 6 major divisions: goals, infancy, childhood, distorted views, planned intervention, and adolescence. Each division begins with a brief introduction by the editors. The menu varies considerably. Thus, in the first section we find 3 excerpts from the Old Testament, the Sermon on the Mount, articles on the family in the U.S.S.R., in India, and in the Kibbutz, a treatise on virtue (by one of the editors), a discussion of creativity (by both authors), papers on parental discipline, identity and interpersonal competence, relation of child training to subsistence economy, a truly delightful sketch on the custom of French families to take their children to the park, and autobiographic reminiscences of George Bernard Shaw. The section on childhood has, among other chapters, discussions on patterns of child rearing, children's humor, projective devices, reactions to finger paints, children's textbooks, leadership and group life. This gives one an idea of the richness and diversity of the offerings. Throughout the volume, clinical observations and reports of experimental studies are interspersed with literary gems, such as excerpts from Butler's *The Way of All Flesh*, D. H. Lawrence's *Sons and Lovers*, Aldous Huxley's *Brave New World*, Einstein's views on education, and Louis Fischer's account of Mahatma Gandhi's adolescence. Even this sampling fails to give the true flavor of this *Lesebuch*.

I believe that the second and third of the three questions which the editors pose are answered amply, if not consistently. There are many thoughtful and some documented descriptions of the nature of infants and children, healthy and otherwise. There are many chapters (in the section on planned intervention) which deal with efforts at modification of a

variety of difficulties. As for the first question: "What kind of people do we want?" much still depends on who does the wanting. The contemporary adult generation is sorely mixed up about its own status and, I fear, transmits its perplexities to child rearing which parents themselves and many experts have managed to deprive of the simple, naïve enjoyment, substituting for this a meshwork of somber rules and regulations.

Possession of this book will reward the owner with the opportunity for many hours of instructive, thought-provoking, and in many instances aesthetically entertaining reading.

L.K.

THE ROOTS OF CRIME. By Edward Glover.

(New York: International Universities Press, Inc., pp. 422. \$7.50.)

This volume consists of studies on crime carried out over a period of 37 years. The various papers, some previously published, some new, are arranged under 8 general headings. The all-pervading theme of the book is that dogmatic psychoanalysis furnishes the most fundamental explanation of crime, pathological or otherwise. Unconscious motivation is the key. Social problems are distracting, always secondary, and whoever gives them great weight is guilty of over-simplification. Economic motives, in prostitution for example, are especially ruled out and regarded as only "ancillary in nature."

It is Dr. Glover's belief that "possibly all forms of criminal conduct" are the result of a "fundamental flight from reality." The aim of psychoanalytic therapy of the offender is "to resolve the unconscious resistances which obstruct approach to the root causes of his behavior." Even if one assumes that these causes are entirely in the psyche of the individual, one cannot help wondering how such therapy can affect a cure if the offender returns to the same social conditions in which these "root causes" were operative in the first place. Dr. Glover seems to be one of those who believe the only thing that counts is how and when the Oedipus complex is resolved, while everything that happens later is incidental. "A criminal group," he writes, "is one in which the unconscious homosexual impulses (i.e., the negative Oedipus complex) have given rise to friction rather than to cooperation." This represents a one-factor etiology.

Kraepelin used to say, speaking of books like this: "Woher weiss das der Herr Souffl-

so?" (How does Dr. Soandso know that? Where are the clinical cases?) There are practically no case examples in this book, and the number of fully analyzed cases on which all this criminological theory is built is exceedingly small. The book's outlook is unclinical. The author makes no distinction between projective tests and the questionnaire method, though whereas the latter is unscientific and often misleading, projective tests have found a definite place in clinical work. The Gluecks' prediction tables are based not on "tests" but on the questionnaire method. The Rorschach test, on the other hand, was devised by a brilliant psychoanalyst and would have been impossible without psychoanalytic principles.

Speaking of the M'Naghten rules, Dr. Glover advocates that definite mental diseases should be specified by law. Quite apart from the fact that the law can classify only crimes, and not diseases, the list he gives is pre-Kraepelinian and unclinical. Manic-depressive psychosis is not just a "disease of the emotions," nor are paranoia and schizophrenia "diseases of the reality and social sense" nor compulsive states a "disease of the reasoning capacity." And if we are to speak of "diseases of the moral faculty," who is to be the judge of what they are, and by what criteria?

When "team research" in crime is discussed, it is especially pointed out that sociological data are never causal, but are merely "precipitating factors." And it is significant that in the enumeration of all those to be included in such a team, psychoanalysts, psychologists, statisticians, *et al.*, lawyers are completely omitted. The author is critical of the legal profession, speaks of judges who sit with "terrified obstinacy" and says: "The ultimate issue is not whether psychiatrists can write reports, but whether magistrates can be trained to read them." Having read very many reports and known many judges, I feel the opposite is true. It is not a question of whether judges can read, but of whether psychiatrists will write reports that are factual, scientific and understandable. The author's attitude about lawyers is in line with a lack of awareness of the history of the law, of law formation generally and of the concrete social conditions under which the majority of the population has to live. What is lacking in the author's socio-legal discussions is recognition of the necessity of safeguarding not only the health of an individual, but his rights as well.

This review does not do full justice to this big, well-written book which contains so many stimulating discussions that it can be read

with advantage by anybody interested in crime. The general views it expresses are the ones predominant in the literature of American forensic psychiatry today. That is why it seems necessary to point out that there is another side to this individualistic, subjective perspective. While the psychiatrists claim that the lawyers are backward, the lawyers feel that many psychiatrists are forward. If psychiatrists want to deal with crime realistically, they must assess the limitations of their own methods more self-critically, and realize the tentativeness of their speculations.

Dogmatic psychoanalysis as applied to social problems is a tragedy: yesterday's advocate of the new has become a prop to the old; yesterday's revolutionary has become today's reactionary. Psychoanalytic psychiatrists have attained the status of a privileged class. We have learned to trace the unconscious disguises and ramifications of the instincts. But have we learned to recognize the equally unconscious bias of our own social position when we are dealing with the multitudes of underprivileged people who fall into crime after stumbling over obstacles more massive than the "negative Oedipus complex?"

FREDERIC WERTHAM, M.D.,
New York City.

THE TESTING OF NEGRO INTELLIGENCE. By
Audrey M. Shuey. (J. P. Bell Company,
pp. 341.)

Doctor Shuey, Chairman of the Department of Psychology of Randolph-Macon Woman's College, has reviewed, in this volume, the differences between whites and Negroes observed in the results of intelligence tests.

Doctor Shuey concludes that the regularity and the concordance of results attest to an hereditary basis for those observed differences. Doctor Garrett, Professor Emeritus of Psychology at Columbia University maintains that the proofs adduced justify that conclusion.

This volume assumes particular importance when we bear in mind the uncertainties and discrepancies which bedevil specialists of this material.

It is useful to recall, at this point, that Unesco assigned the task of formulating a "Statement on Race" to a commission of specialists. In their conclusions they maintained: "Available scientific knowledge provides no basis for believing that the groups of mankind differ in their innate capacity for intellectual and emotional development"; and "When . . . two groups have been brought up from childhood in similar environments, the differences are usually very slight . . ."

Serious protests, with respect to these conclusions, were raised by specialists to whom they were submitted.

One could contend that since not a single experiment, in which two groups of individuals selected from two diverse races, having been raised since childhood in similar environmental circumstances and subsequently subjected to intelligence tests, had been conducted, the declarations above reported can be considered without foundation.

It is not likely, furthermore, that human groups, which display innate differences for all the physical and psychical characteristics which have been studied should reveal themselves substantially equal with respect to intellectual and emotional capabilities.

Does the volume of Professor Shuey furnish the basis, until now lacking, to establish the existence of innate racial differences in the sphere of intellectual ability?

In my opinion it is probable that the volume will arouse objections and discussions because the techniques and the employment of intelligence tests involve, for the time being, very subjective elements, but because of the abundance of the material collected and objectively reported, the volume constitutes a milestone in this area. After its publication the burden of proof rests upon those who reject its conclusions.

In fact the conclusions herein considered accord themselves well with certain theoretical considerations.

I contend, in fact, that one can formulate the following theorem: *If, in a stable environment, two groups of individuals differentiate themselves by virtue of a character which, at least in part, is hereditary and which, at least in one of the two groups, is subject to natural selection, the differences observed between the two groups are, at least in part, innate.*

If for the two groups the environment (taken in the broadest sense of physical and social environment) is identical, the differences of character between the two cannot depend upon the environment and therefore must be innate.

If the two groups live, instead, in diverse environments, and in both or at least one of these, the characteristic considered is subject to natural selection, this will eliminate certain particularities of character and favor others—and in a different manner in the two groups—and if these differences are in part hereditary, there will result, in successive generations, between the two groups, to a certain degree, innate differences.

This is with the qualification that the environment remains stable in such a fashion that

heredity and natural selection have had the time to exercise their influence.

Now, intelligence is certainly, in man, a characteristic in part hereditary, and certainly it is subject to natural selection, in such a manner that the intellectual and emotional differences which are encountered with respect to various populations must be in part innate.

Therefore it can be said that, under the influence of natural selection, innate mental capacities differ among various population groups.

To admit, among the various human groups, innate differences is not the same as admitting that some group is—by virtue of innate quality—superior, and some other inferior.

One cannot, however, exclude the possibility that one group finds itself inferior to another with respect to all the mental traits if it lives in an environment in which mental characteristics assume a minor, and physical characteristics assume a major, importance—in such a manner that natural selection would have favored the development of the latter to the disadvantage of the former. This may have been very well the case with respect to Negro populations.

But it can happen (and this seems to be most frequently the case) that selection exercises itself upon mental characteristics not only intensively but selectively, in such a fashion that each group possesses the innate mental and emotional dispositions best adapted to the environment in which it lives.

From this it follows that while the primitives find themselves in a condition of inferiority in civilized society they are superior to non-primitives in their own environment. The evaluation of superiority and of inferiority, of one or the other group, is thus far subjective.

Before concluding I should like to insist upon two points.

The first is that the development of intelligence is important for the success of an individual and a collectivity, but there are other qualities—among which are the disposition to labor, pertinacity, honesty, conformity or vice versa, the inclination to independent thought, social solidarity, more or less easy contentability, optimistic or pessimistic temperament—which can have much more importance for the technical, economic and cultural progress of society.

The disposition to labor, in particular,¹ has

¹ Cf. C. Gini, "Caratteristiche e cause della primitività," *Genus*, V, #3-4, 1942, *Las Poblaciones Primitivas*, Cuadernos de Extension Universitaria, Buenos Aires, 1955, *Economía Laboral*, Editorial Labor, Barcelona, 1954.

been, more than intelligence, the decisive factor in the progress of society from the animal level of production to the level, toward which it tends, of spontaneous labor.

So much more is it necessary to keep in mind the other factors when we realize that intelligence does not always accord itself with other favorable attributes; thus, there is a negative correlation between intelligence (the desire to know) and the disposition to conform.

The second point is that if in the individual, intellectual capacity contributes to his success the higher its level, it does not follow that a society finds itself in a position correspondingly advantageous the higher the intellectual average of its members. That depends on the type of social organization. For each type of organization there is an optimum in the distribution of the various aptitudes.

A small group of persons of high intellectual capacity, directing a mass of persons of lesser ability but given to work and conformity, could conceivably enjoy an advantage over a nation in which each member is gifted with superior intelligence and who, as a consequence, is little disposed to follow the orders of others without criticism or resistance.

This is one circumstance which must be kept well in mind in the judgment of the qualifications of nations in international competition.

CORRADO GINI,

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President, International Institute of Sociology.

HEREDITY AND HUMAN NATURE. By David C. Rife. (New York: Vantage Press, 1960, pp. 265. \$4.50.)

This is an excellent elementary introduction to the study of the genetic bases of man as a behaving organism. A refreshing forthrightness is among the many qualities which should recommend this book to those readers who are unafraid to look a fact in the face, however challenging of well-intentioned orthodoxies it may be. Dr. Rife believes that human beings are unequal, and that there is nothing to be gained by asserting the contrary in the face of the facts. On the other hand, he believes that by acknowledging the facts it will be possible to deal with them more effectively. His book is an admirable exposition of the biological basis of inequality, while it insists at the same time on the right of every human being to equality of opportunity to develop his potentialities.

Dr. Rife's brief exposition of the mechanisms of heredity are admirably clear, and it is a pity his publisher has not served the author better in the reproduction of the tabular matter and figures. The author misunderstands some of the

assertions made in the *Statement on Race* issued by UNESCO. For example, on the UNESCO assertion that "Most anthropologists do not include mental characteristics in their classification" he comments, "This is baffling and seems to be beside the point." Anthropologists cannot use mental characteristics for the purposes of classification for the simple reason that such characteristics are to a very considerable extent determined by cultural factors, and the taxonomic procedures of the anthropologist are based on morphology and not on the shifting sands of culturally conditioned traits.

Dr. Rife believes that the evidence supports the view that "races" differ in mental characteristics. This is a matter which will long be under debate, but to which future research will alone be able to return the answer. Dr. Rife may turn out to be right, but I do not think that, on the basis of the evidence at present available, it is possible to say anything other than that if such differences will eventually be found to exist, the general, nay, the universal rule will always remain applicable, namely, that by virtue of the fact that all men are human they are entitled to the fullest rights to the development of their potentialities, whatever they may be. This is a view to which Dr. Rife makes it unequivocally clear he fully subscribes.

ASHLEY MONTAGU, PH.D.,
Princeton, N. J.

FUNDAMENTALS OF CHILD PSYCHIATRY. By Stuart M. Finch. (New York: W. W. Norton & Company, 1960, pp. 324. \$5.95.)

This reviewer's appetite was, immediately upon opening the book, whetted by a glance at the Table of Contents; the sequence of the 15 chapters indicated from the start a capacity for clear organization of the vast and multifaceted issues which have their rightful place under the heading of child psychiatry. In a brief preface, the author states his aim as one of presenting the material to "the new student in medicine, psychology, social work, pediatrics, and nursing" as "a broad base for subsequent more specialized courses." This purpose has been achieved with remarkable skill. The style is lucid and devoid of any excursion into would-be professional gobbledygook. The case illustrations are well-chosen and enhance the student's orientation derived from the more general treatment of the problem which they illustrate. It is easy to agree with the publisher, who points on the jacket to the excellence of the specific examples.

There is a refreshingly pluralistic outlook which advises the consideration of "all the

factors" (genetic, physical, emotional) which "will have varying degrees of importance in each case." There is an especially good chapter on parental psychopathology with well-outlined sketches of family types and parental personalities and a summary in which there is much wisdom. A chapter on "special considerations" offers valuable hints to the students on items such as illegitimacy, adoption, foster home placement, divorce, orphanages, hospitalization, and religious differences.

So far so good—much better than good. But one wonders what the beginner (for whom the book is intended and does such a splendid job) is to make of the first chapter. In it, psychoanalytic theory is outlined as the "basis" of child psychiatry on a few pages offered *ex cathedra*. Phases of psychosexual development and mechanisms of defense are presented as a sort of glossary of analytic terms. The definitions as such are apt and succinct but what is the student to do with them after he has committed them to memory? As he goes on with the rest of the book, the occasional and definitely not obtrusive references to orality, anality, and oedipal period must appear to him as foreign bodies in an otherwise beautifully clear and consistent content. One cannot get rid of the feeling that the author has had the need to acknowledge his allegiance to analytic doctrine and that the book might be more enlightening to the novice if he were spared the task of trying to integrate a few memorized bits of sectarian theory with the highly practical and informative discussions in the subsequent chapters. Is it really helpful to the student to start out with the reading of an unsolicited loyalty oath on the part of an author who, having declared his allegiance, proceeds to give so excellent an account of the fundamentals of child psychiatry?

Except for the puzzle created in the student by the first chapter and some sporadic references to it in the text, this is a magnificently written, "basic yet comprehensive book" (statement on the jacket) which bespeaks the author's great competence as a clinician and teacher.

L.K.

PROGRESS IN PSYCHOTHERAPY, VOL. 5. Edited by Jules H. Masserman, M.D., and J. L. Moreno, M.D. (New York: Grune and Stratton, 1960, pp. 262. \$8.50.)

Under the subtitle, "Review and Integration," this 5th volume in the series presents some 32 papers by specialists in psychotherapy. Beginning with an introduction by editor J. L. Moreno, the papers are presented under

the headings "History and Review," "Fundamentals of Psychotherapy," "Methods of Psychotherapy," "Special Techniques," "Current Applications," "Interdisciplinary Integrations" and "Developments Abroad," with a concluding paper by editor Jules H. Masserman.

P.P.T.

EPIDEMIOLOGY AND MENTAL ILLNESS. By Richard J. Plunkett, M.D., and John E. Gordon, M.D. (New York: Basic Books, Inc., 1960, pp. 126. \$2.75.)

This is one of a series of reports made for the Joint Commission on Mental Illness and Health as a basis for possible federal and state mental health programmes. Here the authors plainly set forth the serious limitations in current scientific knowledge which make it difficult to establish the nature, cause and control of mental disorder—its relationships to the manifold conditions of life—heredity and environment. They point out clearly the shortcomings of past community surveys which failed to advance materially our knowledge. And, although they make pertinent suggestions for further studies, they recognise that they are offering "no easy detours" to gain a basic understanding of one of the most important public health problems.

This fascinating and informative little volume, pleading for full facts to replace half facts, fads, fancies and fallacies, should be read by all in the psychiatric and general medical fields. Congratulations on its content and form are quite in order.

NIEL E. MCKENNON, M.D.,
University of Toronto.

AFRICAN HOMICIDE AND SUICIDE. Edited by Paul Bohannan. (Princeton, N. J.: Princeton University Press, 1960, pp. 270. \$6.00.)

This excellent volume constitutes a striking example of the value of the comparative anthropological method in producing insight and understanding of complex forms of behavior. Dr. Bohannan has stimulated the production of systematic studies of homicide and suicide in 7 African tribes, 2 by himself and 5 by other anthropologists. The subject is introduced by the editor with a consideration of theories of homicide and suicide, and is concluded by him with an illuminating analysis of the studies reported in this volume on patterns of murder and suicide.

The anthropologist would expect to find cultural factors playing the dominant role in determining patterns of homicide and suicide, and that, indeed, is what Dr. Bohannan finds.

But if the universal likenesses are impressive, so are the differences, if only, again, because they underscore the importance of cultural factors in conditioning human behavior.

This volume constitutes a major contribution to the subjects of which it treats. All students of human behavior will benefit from its study.

ASHLEY MONTAGU, PH.D.,
Princeton, N. J.

THE METABOLIC BASIS OF INHERITED DISEASE.

Edited by John B. Stanbury, James B. Wyngaarden, and Donald S. Frederickson.
(New York: McGraw-Hill Book Co., 1960,
pp. 1,447. \$30.00.)

In 1908 Sir Archibald Garrod took for his Croonian Lectures the Subject of *Inborn Errors of Metabolism*, published as a volume in 1909 and again in 1923. From his observations on certain lifelong diseases Garrod concluded that they probably originated as a result of the reduced activity or absence of a single enzyme governing a single metabolic step. Fifty years later Garrod's brilliant inference was triumphantly proven when La Du, *et al.*, demonstrated, in 1958, the absence of homogenistic acid oxidase activity in the liver of a patient with alcaptonuria.

The present admirable volume provides a complete survey of all inborn errors of metabolism thus far uncovered. The editors have called upon a whole regiment of experts each of whom writes on the inherited metabolic disorder with which he is most familiar. The clinical, biochemical, and genetic information is most readably and graphically set out, so that the uninitiated reader may gain from this volume almost as much as the expert will. There is an introductory chapter on elementary principles, and there is a final chapter on how to keep records of such conditions.

Most commendably the editors have attempted to emphasize the necessity of uniformity in a terminology which traditionally bristles with the most sesquipedalian of synonyms. It is to be hoped that, short of an International Committee, that Stanbury, Wyngaarden, and Frederickson will become the ultimate arbiter on terminology.

The book has been admirably produced, and is especially appealing to all students of human behavior. If there is one criticism it is that some of the contributors rather loosely used the term "race," and altogether misuse that unpardonable term, "Nordic." The bibliographies are exhaustive, and there is a thorough index. The editors and contributors and the publishers are

to be congratulated upon the publication of this eminently useful book.

ASHLEY MONTAGU, PH.D.,
Princeton, N. J.

THE ARCHETYPES AND THE COLLECTIVE UNCONSCIOUS. Coll. Works Vol. 9: Part 1. By C. G. Jung. Translated by R. F. C. Hull. (Bolligen Series XX. New York: Pantheon Books, Inc., 1959, pp. 451. \$7.50.)

This book is the first of two volumes presenting Jung's concepts of the archetypes and the collective unconscious. It consists of essays written from 1933, although the beginnings of these themes may be noted in his papers as early as 1902.

Prof. Jung is well known as a profound student and accurate observer and his contributions, which include an extension of the knowledge of schizophrenia, the elaboration of association tests, the differentiation of personality types, the advancement of the knowledge of symbolism, and the enrichment of the whole field of racial psychology, are of far reaching intellectual, psychological, and psychopathological significance. Jung has often been misunderstood and misinterpreted in some of his theories. His early writings were somewhat involved, particularly for the beginner, as his books on the psychology of dementia praecox, and a later one on the psychology of the unconscious are rather heavy going for those not well grounded in ancient and racial lore.

The theoretical basis for the particular concepts presented in the present book is given in the first 3 essays. These are followed by 8 essays covering the topics describing mother and child archetypes, the psychology of the spirit in fairy tales, studies on individuation and those concerning mandala symbolism, as well as other related subjects.

In the section on the "Psychological Aspects of the Mother Archetype" Jung explains clearly what he understands of the nature of the archetype. "Again and again I encounter the mistaken notion that an archetype is determined in regard to its content, in other words that it is a kind of unconscious idea (if such an expression be admissible). It is necessary to point out once more that archetypes are not determined as regards their content, but only to a very limited degree. A primordial image is determined as to its content only when it has become conscious and therefore filled out with the material of conscious experience . . . the representations themselves are not inherited only the forms, and in that respect they correspond in every way to the instincts, which

are also determined in form only. The existence of instincts can no more be proved than the existence of the archetypes so long as they do not manifest themselves concretely."

The last two essays are illustrated by 79 half tone plates, of which 29 are in color. The mandala symbolism is described in detail and beautifully illustrated. There are 27 pages of classified bibliography and the text is adequately indexed. A review of the productions of this famous scholar makes extremely interesting and informative reading.

NOLAN D. C. LEWIS, M.D.,
Princeton, N. J.

TREATISE ON NERVOUS DISEASES. 3rd ed.

- By Mario Gozzano. (Milano: Casa Editrice Dr. Francesco Vallardi, 1959, pp. 929.)

The clinical discussions and differential diagnosis in this well-printed textbook on neurological diseases are excellent, full of sober judgment and often qualified by cautionary asides to prevent the inexperienced reader from falling into excessively rigid or literal interpretations. The considerable clinical experience of the author is evident and permeates the whole text. The book is readable, very didactic and full of thoughtful discussions.

The most glaring fault in the book is the absence of bibliography. Books of this kind are used by students, practitioners and interested specialists as take-off points and as guides to the relevant literature on the subject. Russell Brain's neurological textbook is, perhaps, the best example of the value of a few well chosen key references placed at the end of each chapter and in Dr. Gozzano's book this would be a most welcomed feature.

If the text is up to date in certain details (*i.e.*, treatment) in others it has a "dated" look and the theoretical thought seems to stop short with Sherrington. The work of Moruzzi, Magoun, Jasper, *etc.* passes unnoticed except for an occasional nod here and there. Three pages are devoted to Apathy's and Bethe's old work on neurofibrils, transmission of nerve impulse and the theory of the neuron but no mention is made of the modern work with the electron microscope. Chronaxies are still used to explain basic facts of neurophysiology but the fundamental work of Hodgkin, Huxley, Katz and others on nerve impulse transmission passes unnoticed.

This reviewer would also express some reservations about the purely anatomical order of exposition (diseases of the hemispheres,

of the cerebellum, of the brainstem, of the spinal cord, *etc.*). Granted there is no such thing as a perfect classification of neurological diseases and that an anatomical order is simple and follows the classic tradition, nevertheless it is also true that this is hardly suited to today's approach which is more physiopathologic, etiologic and closer to internal medicine. For instance, the large group of spinal cerebellar degenerations are dealt with in piecemeal fashion under the chapters "cerebellum," "spinal cord," *etc.*, thereby losing the unity of concept linking these heredo-degenerative diseases with other hereditary conditions affecting muscle, peripheral nerve, posterior roots, and/or spinal cord. Acute disseminated encephalomyelitis together with Devic's disease, multiple sclerosis and Friedrich's disease, are considered to be affections of the spinal cord, which they are not, while the more comprehensive concept of "leukoencephalopathy" or "demyelinating disease" is nearly lost. It would be perhaps commendable to suppress references to exceedingly rare conditions (like Mills' Syndrome for instance) and to enlarge instead the chapter on muscle diseases adding some of the "new" processes like polymyositis, thyrotoxic myopathy, myopathy in visceral cancer, menopausal myositis, *etc.* Progressive nuclear ophthalmoplegia should be included as a myopathy (Kiloh and Nevin) rather than persist in considering it neural in nature. Other details are merely oversights. For instance, on page 352 it is said that headache from brain tumors is worse on standing and improves on lying down, while the consensus, at least on this side of the ocean, seems to be the other way around. The old work of Schiff-Wertheimer shows the posterior limb of the internal capsule to be supplied by the anterior choroidal artery but it is wrong to assume (p. 101) that occlusion of this vessel leads to softening of the area and to complete hemiplegia; repeated surgical ligation of this vessel for the treatment of parkinsonism (Cooper) have failed to substantiate this view.

The author himself says in the introduction "scientific research is in continuous evolution and the new acquisitions rectify previous interpretations." There is no doubt that such an excellent, didactic and complete textbook will achieve many editions in which the old dictum "nuova construege sed amplia vetusta servare" will be fully realized. It deserves it.

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TRAITE DE PSYCHIATRIE. By H. Baruk. (Paris : Masson & Cie., 1959, pp. 1569, 2 volumes.)

This *Treatise of Psychiatry* by the internationally renowned French psychiatrist approaches in size the dimensions of a Handbook of Psychiatry, written by one author. To the more widely read, Baruk needs no introduction. He is professor of mental diseases at the University of Paris and physician-in-chief of the famous Maison Nationale of Charenton, a government mental institution, which corresponds in this country to St. Elizabeths Hospital in Washington, D. C.

The first volume opens with a chapter on the personality and discusses what psychiatry, psychology with its multitude of tests, and even philosophy can contribute to this problem. The influence of dynamic personalities on others is exerted through suggestion and domination, while all too often the better judgment and healthy critique of others is annihilated by their dynamism. In a hypomanic phase such an individual may become cynical and act without scruples. Under more abnormal conditions there may then occur varied grades of personality disorganization, associated with aggressive acts or ideas of persecution. The author then takes up the methods of examining the mental patient, which should include a neurological as well as a complete physical examination made by the psychiatrist. In the section of psychopathology, there is a clear account of anxiety, depersonalization, melancholia, mania and hypomania, mental confusion, hallucinations, the Kraepelinian "dementia" in schizophrenia, and the organic dementias.

The second volume is given over to therapeutics and etiology, and deals with the various kinds of shocktherapy, chemotherapy, psychosurgery, and the tranquilizers. There is a discussion of the dynamic causes, which may give rise to psychopathologic syndromes, reserving here also a place for moral factors.

Under the heading of toxic-infectious etiologies there are described the psychoses caused by infections, such as general paralysis and other encephalitides (von Economo). There is an adequate chapter on rheumatic fever, which is reintroduced into psychiatry, and which is

becoming recognized everywhere, even in Iron Curtain countries, as the most important and frequent cause of the chronic infectious psychoses. They represent the many patients with rheumatic heart disease (usually mitral stenosis) in mental institutions, in whom the smouldering rheumatic infection on the heart valves has also involved the brain in the form of a recurrent rheumatic obliterating endarteritis, mainly of the small meningeal and cortical vessels, producing gross and microscopic infarctions in the cortex. The entire clinico-anatomic complex is referred to as rheumatic brain disease, late sequel of rheumatic fever. It is more frequent among women, the ratio between women and men being 3:1. The condition can be successfully treated with a combination of penicillin and steroids (cortisone).

There are chapters on psychosomatic medicine, and on mental symptoms provoked by such diseases as hepatitis, dysentery, hypertension, etc. Furthermore, mental disturbances with an underlying endocrine background (Bleuler), and those brought on by brain trauma and cerebral tumors, are thoroughly discussed. The theme of cerebral arteriosclerosis and of the senile psychoses is somewhat brief, considering the increasing importance of this group of mental patients.

The manual is concluded with a large section, which Baruk calls psychiatric humanism, and which includes what is known to the American psychiatrist as the sociological and cultural aspect of mental disease. A chapter on war psychiatry is added here. There is a stimulating discourse on the psychotherapies and Freudian psychoanalysis, which makes particularly illuminating reading because Baruk is also a scholar of the Hebrew language, literature, and history.

This handbook offers an excellent source of information on contemporary French psychiatric thinking and practice—and for that matter, of continental European psychiatry. In this country, the use of the book, being written in a foreign language, will unfortunately be limited, but it should be available in the libraries of all American medical schools.

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EVOLUTION OF MENTAL HEALTH PROGRAMME IN TAIWAN

TSUNG-YI LIN, M.D.¹

A brief description of the conditions in 1946 when modern psychiatry was introduced in Taiwan may be necessary. The handing over of the Japanese Administration to the Chinese resulted in the complete overhaul and reorganization of political, military, social, economic and educational systems as well as in a change of official language. The Government was burdened by many important cares. The public, with little preparation, was absorbed in the effort of adjusting to a difficult transitional situation. The medical and public health professions were busy in their immediate tasks of combating the acute infectious diseases and restoring the services to the pre-war level which the inhabitants used to enjoy.

The situation regarding psychiatry can be easily summarized in one word: a vacuum. Since the Japanese psychiatrists had been repatriated and there was not one native Chinese sufficiently trained in this field, the only Government Mental Hospital with a capacity of 100 beds and two other public institutions run by charity organizations with 50 and 70 beds each merely housed un-cared-for lunatics. The Department of Psychiatry of the University Hospital was a deserted building filled only with cases of glass-ware and books, most of them useless. The general attitude of the medical profession as well as the lay public to psychiatry was characterized by indifference and contempt arising from their ignorance and also prejudice against mental illness. One more factor contributed to this negative attitude to psychiatry: there was a general belief that Chinese society needed little psychiatry because of its traditional philosophy and extended family system which act as protections against mental illness.

The task of initiating a psychiatric and mental health programme in Taiwan under such almost impossible circumstances presented an exceptional challenge to the

writer. After reviewing the situation and after considerable deliberation, it was clearly realized that no blue-print or precedent was available to act as a basis for the mental health planning in Taiwan. For such a situation, where a society with traditional Chinese culture and social institutions was experiencing transitional uneasiness arising, not only out of the political situation but also from rapid industrialization and modernization, was unique and therefore called for special consideration and careful planning. The plan had to be realistic, sensible and dynamic.

The first step was to define the magnitude of the problem by determining the prevalence of mental disorder in the community.

THE SURVEY AS A BASIS FOR MENTAL HEALTH PLANNING

Census surveys of a sample population in three communities—rural, small town and urban—were carried out from 1946 to 1948; altogether 19,931 people in these communities were studied. The aims of these surveys were:

1. To assess the mental health needs of the community through objective data on the prevalence of mental disorder.
2. To understand the available resources in the community through the study of the actual care of the mentally ill and the attitude of the family and society in general towards them.
3. To provide reliable data to be compared with those from other cultures.
4. To collect objective data on mental disorder and socio-cultural (ecological) factors in this community to gain an understanding of their relationship.

The research method and the results obtained are reported elsewhere(3). In this connexion only those findings which helped to formulate basic principles for a mental health programme and to establish priorities will be discussed.

The finding that 10.8 per 1000 in the

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sample population suffered from mental disorder needing psychiatric attention challenged the prevailing misconception that Chinese society was free from mental illness, and showed the problem to be of the same magnitude as in other societies. The fact that the great majority (over 95%) of the psychiatric cases were untreated provided further convincing evidence of the needs for a mental health programme. Upon the presentation of the data of the survey, the medical profession and health authority were stimulated to revise their traditional views of psychiatry and to pay more attention to the psychiatric problems of the community. In other words, the survey helped to create a more favourable attitude to a mental health programme on the part of medical and health authorities.

The pre-survey impression that Chinese society has a high threshold of tolerance to deviant behaviour was confirmed by the survey. This observation led to a basic and important query about the wisdom of developing a mental health programme along the traditional pattern of building mental hospitals. The proper use of the existing resources in the community, such as the strength of extended family relationship as expressed in the responsibility assumed by the family for the welfare of each member, became the central interest of the mental health planning.

Given the lack of practical psychiatric personnel of any category, the magnitude of mental health problems revealed by the surveys constituted a special challenge when it came to formulating and implementing a long-term programme. To this end, a 25-year mental health programme was evolved which was divided into three stages to accomplish the three major objectives envisaged:

1. To integrate psychiatry into medicine as a respectable member of the medical profession through the intensification of the teaching of psychiatry in the medical school.

2. To integrate mental health into public health practice.

3. To instill sound mental health principles into the general educational scheme.

SETTING UP A PSYCHIATRIC CENTRE AT THE UNIVERSITY HOSPITAL AND DEVELOPMENT OF A NUCLEUS OF STAFF AND INSTRUCTORS

It was argued that, unless psychiatry were accepted as a legitimate scientific discipline and a respectable member of the medical profession, it could have no prospect of future development; the logical place to foster its acceptance is through the medical school. The resistance to psychiatry on the part of both faculty and students was clearly apprehended. The social stigma attached to psychiatric illness, prejudice against the scientific grounding of the psychological sciences and disrespect for the psychiatrist as a fully-fledged member of the scientific and medical professions were widespread. The first and essential task had to be "educational" and two closely related projects were initiated: the establishment of the Department of Neurology and Psychiatry of the University Hospital and the intensification of the teaching of psychiatry to undergraduate medical and nursing students.

The functions envisaged for the Department of Neurology and Psychiatry are the following:

1. The location of the Department of Psychiatry in the University Hospital should provide a physical demonstration that psychiatry is part of medicine and should also facilitate a close collaboration between psychiatry and the other medical disciplines.

2. An active university department should serve as a centre of psychiatric treatment to show both the medical profession and the general public, who were firmly wedded to the idea that mental disorder was incurable and hereditary, that psychiatric illness can be treated and cured.

3. This should make psychiatric service of a non-custodial nature accessible to the patients and general public, and help to do away with the old associations of "mental illness—lunatics—asylums—bars and walls."

4. The Department should develop into a community mental health centre, equipped with such facilities as a social and domiciliary service, a children's clinic, a day hospital, etc.

5. The last and most essential function is to serve as a centre for teaching, training and research without which no sensible programme can be evolved and implemented.

The immediate task in the establishment of the Department was to secure and train a nucleus of staff capable of carrying out the clinical functions and also to develop a group of instructors for teaching and research. Fortunately, from the start, two to three intelligent medical graduates joined the Department each year for training in psychiatry. The training was done through supervised clinical work and group discussions on academic subjects. A few of the trained psychiatrists who showed ability and interest in academic work became instructors and helped with the undergraduate teaching programme which consisted at that time of a total of 64 hours of lectures. They took an active part also in the teaching of the nursing school, and several qualified nurses came every year to the Department for specialization in psychiatric nursing. Thanks to this young enthusiastic staff, the Department was able to establish its routine clinical service and also carry out the survey work.

Advanced training for the teaching staff started in 1950 when the writer, through the American Bureau of Medical Aid to China and a Harvard Research Fellowship, spent two years at the Boston Psychopathic Hospital. A Chinese psychiatric social worker, trained at Simmons College, who had had previous experience in Taiwan, joined the Department in 1953. Two more psychiatric instructors who had spent 5 to 7 years in the Department received advanced training in the United States and Canada.

The World Health Organization started its aid to the mental health project in Taiwan in 1955 and has generously and most effectively assisted in the advanced training of the teaching personnel in psychiatry and mental health. Two psychiatrists received one-year fellowships, one in the United States and the other in Europe; one clinical psychologist and one child psychiatrist studied in the United States for two years; one nurse in the United States for two years and two nurses two years each in the United Kingdom and the United States.

The formation of a nucleus of qualified staff at different disciplines and the prospect of more of them in the near future have made it possible to plan and implement a long-range programme. The basic principle

adopted was that no programme should be planned without preparation of the personnel and every project, clinical or otherwise, should include training as an essential aspect of its design.

INTENSIFICATION OF THE UNDERGRADUATE TEACHING OF PSYCHIATRY

Nevertheless, under the circumstances in 1946 in Taiwan, the choice between the intensification of undergraduate teaching of psychiatry to medical students and the training of specialized personnel such as psychiatrists, psychiatric nurses, psychiatric social workers and psychologists was not hard to make. The experience of the "advanced" countries had already clearly indicated that the training of specialized personnel alone never catches up with the needs of the community. Emphasis was to be laid, it was decided, upon the integration of psychiatry into the medical and nursing curriculum to teach students to understand and forward the mental health programme. Properly trained general physicians should be able to handle mild psychiatric problems. Home care and rehabilitation programmes should be the main line of development in the mental health programme and therefore local practitioners should be trained in this respect. Moreover, the attraction of young intelligent and properly motivated graduates to psychiatry as a specialty was essential.

The character of the medical curriculum is difficult to change, particularly when it has to do with psychiatry. A combination of circumstances made it possible to remodel the teaching of psychiatry at the National Taiwan University Medical College according to the policy formulated above. In 1953 and 1954 the medical curriculum of the University underwent dramatic revision: to increase efficiency the "block system" of teaching was adopted and teaching hours redistributed in accordance with modern medical trends. The recommendations regarding psychiatry of the two advisers on medical education² came as a surprise, both to the non-psychiatric faculty and to the

² Dr. H. Brown, Dean of the School of Public Health, Columbia University, and Dr. W. G. Davison, Dean of Duke University Medical School, were ICA medical education consultants in Taiwan in 1953 and 1954.

psychiatric department, because in the place of 64 hours of lectures on psychiatry for the whole medical curriculum, 16 hours were to be given as a course in medical psychology and 14 hours for neuropsychiatric diagnostics in pre-clinical years; each student was to have clerkship training for 9 full weeks, half of the students were to spend an additional 6 or 7 weeks as interns in the final year. This intensification of psychiatric teaching naturally was regarded by the other departments as an invasion and certainly presented a formidable task to the understaffed Department of Neurology and Psychiatry. The timely publication of the report of the Ithaca Conference (1952) made this seemingly impossible teaching load appear as both a challenge to take its share of responsibility in medical education and an opportunity to forward the advance of psychiatry.

The teaching programme is described elsewhere(4, 6) and only an outline is briefly given here. The lectures on medical psychology cover the principles of human behaviour and the growth and development of personality, particularly in relation to Chinese society and culture. The course on psychiatric diagnostics prepares the student for a better understanding of the psychology of the ill, the recognition of the subtle and gross signs of emotional and behavioural disturbances, interviewing technique and the doctor-patient relationship in a medical setting. The 9-week psychiatric clerkship training programme is characterized by the students' active participation in clinical work mainly with ambulatory patients and by academic instruction in seminars. The daily clinical work with one ambulatory patient helps the student not only to see the most common types of patients, but also illustrates for him the kind of problems which call for psychiatric attention. This experience is augmented by the daily case conferences of the Department which acquaint the student with the multidisciplinary intensive approach of the psychiatric team. The 60 subjects included in the seminars not only deal with clinical psychiatry and psychotherapy, but also cover such areas as the biological basis of mind, personality development and child psychiatry, psychiatry and medicine (psychosomatic

medicine), the mental hospital, mental health (psychiatry, community and law). Through these seminars the student obtains a general picture of the current problems and trends of psychiatry and also the position and role of psychiatry in relation to medicine, public health and society.

Neurology is taught with psychiatry as an integral part of the curriculum and is presented so as to help the student understand the integrative function of the central nervous system in relation to outside stresses and also to the internal organs.

Another feature of this teaching programme is the strong emphasis on the students' active participation in the learning situation and the encouragement of self-education and critical thinking. Students are also encouraged to participate in ongoing research projects to which many of them respond with enthusiasm. An average of one-fifth of the students choose a subject in psychiatry for graduation thesis. These research activities have been regarded as a most fruitful experience both by the students and the staff.

One half of the students take up psychiatry as part of their rotating internship training for 7 weeks before graduation. The limit on the number of students is due to the limited facilities available. The aims of the intern training are to develop the students' understanding and skill in psychological medicine, in order that they may deal with mild psychiatric problems with greater confidence. For this, three types of instruction are given. First, psychotherapy of two patients under supervision, secondly, actual experiences in dealing with psychiatric problems in the emergency clinic, and thirdly, further experience in a ward with treatment procedure, physical as well as occupational and rehabilitational.

The results of the teaching programme still remain to be seen and a careful evaluation is indicated. The encouraging response to it may, however, justify the view that this programme should continue. The morale of the staff has risen substantially since the inception of the programme; this is equalled by the students' genuine interest in psychological medicine, which has replaced their original anxiety and prejudice. The appreciation shown by the students

for the teaching method which is strongly biased towards self-education is most encouraging. The increase of more intelligent consultations on psychiatric problems from other departments may also be the result of the extensive psychiatric instruction. This teaching programme, however, may and will change in accordance with the scientific evolution and the needs and resources of the time. The clear recognition of its dual responsibility in taking a proper share in medical education and in preparing the ground for the growth of psychiatry and the mental health programme should guide the future development of the programme.

POST-GRADUATE PSYCHIATRIC TRAINING PROGRAMME AND THE TRAINING OF OTHER PERSONNEL

With the growth, both in number and quality, of the staff and the increasing applications for specialist training, the time was felt to be ripe for the organization of a systematic post-graduate training programme in 1956. The extensive trip made by the writer, sponsored by WHO, to the United Kingdom, Europe and a number of Asian countries made a timely contribution to the shaping of this programme. Many useful observations were made and ideas obtained, both from visits to highly developed psychiatric centres and from contacts with colleagues engaged in pioneer work in mental health in the developing countries.

A few principles were formulated for the post-graduate training programme of psychiatric and mental health personnel :

1. The post-graduate training should be obtained locally, in order to familiarize the trainee with the common clinical problems and the needs and socio-cultural backgrounds of the patients, as well as with the philosophy and the state of development of the mental health programme in Taiwan.

2. No one school of thought should be adopted as the basis of theoretical teaching or clinical instruction ; the trainee should be exposed to diverse views of psychiatry and encouraged to develop a balanced scientific viewpoint through critical thinking and reading.

3. Small group discussions, case conferences and seminars should, for prefer-

ence, be the methods employed, and a multidisciplinary team approach should be woven into all aspects of the training.

4. For a few of the staff selected for future leadership, an advanced training abroad should be provided ; in this case, emphasis should lie not on obtaining a degree or diploma, but on widening the scope of the trainee and also on actual experience in specific fields.

The length of the post-graduate course is 4 years ; the first 2 years for training in clinical psychiatry, psychotherapy and clinical neurology, the third year in child psychiatry and psychosomatic medicine, the fourth year in administrative psychiatry, forensic psychiatry and community mental health and experience in teaching. This programme is still at an experimental stage. Though it has been a slow process, a number of trained psychiatrists are now available to meet the expansion of the teaching programme, the community mental health programme and also for the improvement of the Government Mental Hospital.

As regards psychiatric nursing, a more or less similar programme has been adopted, but on a less intensive scale and, it is regretted, with less satisfactory results. This is largely due to the lack of leadership and of sufficiently trained instructors. The situation has greatly improved in the last few years since the arrival of the World Health Organization mental health nursing adviser and is expected to continue to improve with greater speed with the return of fully-trained instructors from abroad.

The other disciplines of the psychiatric team, i.e., clinical psychologist, psychiatric social worker, occupational and rehabilitational therapists, set a more serious problem for both recruitment and training, because these professions have never existed and were unheard of to many people, including some in responsible positions. It was therefore sought, through personal contacts, to get a few young people of unrelated professional background interested in the work and to give them the necessary training. Though work of this type is tedious and frequently very frustrating, the Department now comprises a psychiatric social worker trained in the United States, with three junior workers, a trained clinical psycholo-

gist with a junior staff and two occupational therapists. There is still a long way to go before schools or courses for training these workers, who are so essential to a mental health programme, can be established.

THE PLACE OF NEUROLOGY

Neurology has been an integral and important part of psychiatry, both in the clinical services and undergraduate and post-graduate teaching. Since the psychiatric activities in general are more oriented towards social psychiatry in Taiwan, neurological services have helped to provide a more balanced outlook. As neurology was also a heretofore neglected medical discipline in Taiwan, the difficulties in developing it into a full medical discipline are equal to those encountered with psychiatry. With the gradual growth of the Neurological Division, it is hoped that an independent unit will be established when the fully-trained senior neurologist returns from his training at the National Hospital for Neurological Diseases, Queen's Square, London.

Though not yet fully developed, this Division has made quite remarkable contributions. Several diseases which were believed to be rare or non-existent among the Chinese or the Orientals have been found, such as multiple sclerosis, Spielmeyer's amaurotic idiocy, Sturge-Weber's disease, Wilson's disease. The main clinical and research interests have been in the study of epilepsy, particularly among children. A study of the mental development of 500 epileptics is under way.

The research activities have so far been exclusively in clinical research. Recently a junior psychiatrist, who has finished his psychiatric training, has joined the United States Navy Medical Research Unit No. 2 at Taipei for post-graduate training in biochemistry, with a view to initiating a laboratory research programme in the Department of Neurology and Psychiatry in the near future.

The inclusion of neurology and psychiatry in one department has been a great asset, not only because it has provided the necessary biological viewpoints and skills to psychiatry, but it has also improved acceptance of the whole Department of Neurology and Psychiatry, by other medical disciplines,

since the medical profession looks less askance at neurology than at psychiatry.

MENTAL HOSPITALS AND PSYCHIATRIC SERVICES

It is regretted that the improvement of the Government Mental Hospital and the planning of mental hospital services in general have been, in the first 10 years, out of the central focus of the mental health programme. It proved a practical impossibility radically to improve the conditions at the Mental Hospital without a core of sufficiently trained personnel, let alone to consider building new mental hospitals. The lack of a good psychiatric hospital has in turn, however, limited the scope of the post-graduate training programme, and also the possibilities for large scale training of psychiatric personnel.

It is now planned to build a 400-bed mental hospital in the South of Taiwan and so far wards totalling 120 beds have been completed; this hospital will become an affiliated teaching institution to a new medical college and also to the Department of Neurology and Psychiatry of the National Taiwan University. This programme is largely carried out with ICA aid from the United States of America, both for the construction of the hospital and the training of personnel, undertaken mainly by the Department of Neurology and Psychiatry.

The emphasis in the planning of clinical services in Taiwan will be on setting up psychiatric departments or clinics in general hospitals. The rapidity of this extension of services depends upon the rate at which trained psychiatrists and other personnel become available, and also on the acceptance, on the part of hospital authorities, of psychiatry.

MENTAL HEALTH AND PUBLIC HEALTH

The search for possible and constructive ways of introducing mental health principles into existing public health practice led to the conclusion that the main initial task should be "educational." The preoccupation with control of infectious diseases and reduction of mortality rates on the part of the health authority had, in the past, been too fixed to allow them to turn their attention to mental health. The main interest shown

by them in the subject had been the maintenance of the only mental hospital. Yet the magnitude of the mental health problems revealed by the surveys, the demonstration of the mental health work of the Department of Neurology and Psychiatry, and the increasing interest in psychiatry shown by young medical and nursing graduates combined to influence the attitude of the health authorities and the medical school, and resulted in the establishment of the Taipei Children's Mental Health Centre in 1955.³

The preparatory work began in 1952 when the Children's Clinic was set up in the Department of Neurology and Psychiatry; its main functions were, firstly, to find out whether it was justified to propose such an establishment and, secondly, to train a corps of mental health workers for children. The training of professional workers remains the major task of the Centre, but considerable contributions have already been made to both the undergraduate and post-graduate training programmes.

A major step towards the goal of introducing mental health into public health was taken in 1959 when a mental health mobile clinic was started. A weekly visit is made by a team of the Taipei Children's Mental Health Centre to the Public Health Training Centre located in a town outside Taipei. The mental health team, consisting of a senior psychiatrist, a psychiatric social worker, a public health/mental health nurse and a psychologist, conduct a conference to discuss cases presented by the staff and trainees; a seminar on major mental health problems encountered in public health work follows the case-conference. It is hoped to expand this activity to the newly-established Institute of Public Health, National Taiwan University, as part of its training programme for health officers.

The effects of such an undertaking are slow to appear and should be carefully weighed. Optimistic perseverance may be

rewarded in the future; in fact this has already occurred in its crudest form after a year's operation, as shown by the enthusiasm expressed by the trainees, the demand for more sessions and also the improved quality of the discussions. A most rewarding experience was the request for a special seminar course made by schoolteachers from the town in which the Public Health Nursing Training Centre is located and prompted by what they heard from the nurses about the course.

Two more projects have been undertaken by the mobile clinic, both in relation to school health, one with a school in Taipei, and the other with five schools at a small town and the adjacent rural area. Weekly seminars are conducted with groups of teachers on the identification of behaviour problems and possible approaches in their management. The emphasis in seminars and conferences is to encourage the participants to search for knowledge and effective tools in dealing with mental health problems rather than to give them "prescriptions," "blue-prints," or "theories." This method has been accepted as most stimulating and with the co-operation of these teachers a survey of the major psychological problems in primary schools is underway.

The National Association for Mental Hygiene has carried the major bulk of mental health education to the public since 1954. The shortage of manpower in mental health has again limited the scope of its work, but the initial efforts in reaching the teachers and college students, and the intellectuals of the community through seminars and lectures have obtained favourable responses. The publication of a series of mental health booklets and the mental health bulletin, in collaboration with the Taipei Children's Mental Health Centre, has succeeded in creating a ring of intellectual supporters in the community.

THE ROLE OF RESEARCH

At the start of the mental health planning it was the desire to assess mental health needs and to understand the resources in the community which led to the census surveys of mental disorder of the three communities. Their results and findings have provided the basis and guide lines for the

³ This Centre, located next to the Department of Neurology and Psychiatry of the University Hospital, is a joint project of the National Taiwan University and the provincial Government Public Health Administration. Dr. H. G. Gundry, WHO Consultant, helped in the planning of the Centre, and ICA donated the building which is presently adding a ward to accommodate 10 children.

ensuing developments in psychiatric education and community mental health programmes. The pragmatic approach which coloured the first phase of the introduction of psychiatry to Taiwan—initially it was manifested in the seeking of precise information by means of surveys—was further strengthened by the very success of the programme which emerged from these surveys. This orientation also permeated not only the clinical activities but the planning of further research programmes as well. Given the shortage of trained research personnel of any sort, the attempt to proceed through factual investigations has not been an easy task. It should be said that the opportunities for mental health research in Taiwan are exceedingly rich but the accomplishment so far has been embarrassingly minimal.

Some of the major researchers and research plans may be summarized as follows:

1. *Epidemiological Studies of Mental Disorders Among the Mountain Tribes.*—Following the surveys of Chinese communities, 4 tribes of the original Malayo-Polynesian inhabitants of Taiwan were studied between 1949 and 1953. These tribes lived in isolation from the Chinese population as well as from each other, differing in language, habits and levels of cultural development. The 4 tribes represented respectively the most "primitive," the most advanced and two intermediate groups.

The research technique adopted was similar to that used in the previous surveys in order that the findings might be comparable. The purpose of this research project was to find out whether the manifestations and prevalence of mental disorder differ between these tribes and the Chinese or differ among themselves, and if so, how they may be associated with socio-cultural and genetic factors. (The report of this study will be published by Rin in 1961.)

2. *Epidemiological study of high blood pressure.*—An increasing need was felt to examine the common belief that the Chinese had low blood pressure and were free from hypertension; hospital statistics and Government reports on mortality had begun to show the increased gravity of hypertension in the community. The rapid social

change after the influx of mainland Chinese since 1948 led to the postulation of a possible association between the apparent increase of hypertensives and socio-environmental factors. Epidemiological surveys of urban and rural populations were envisaged and the study of 9729 inhabitants over the age of 15 of both sexes living in two districts of Taipei was carried out in 1954.

Census household visits were made to measure the blood pressure as well as to collect the medical and social history of each inhabitant. The data are still in process of analysis and only a part of them has been reported (5, 6). It was clearly observed that though the Chinese had lower mean blood pressures in youth, their blood pressure rose with age and became comparable in middle-age to the occidental pressures. Correlation was found between the rates of hypertensives and upper class, and there was some suggestion that current psychosocial stresses experienced by the upper class may play a part in this.

This research project has not only formed a scientific pursuit but also offered unique opportunities for the development of the mental health programme; the collaboration of the departments of medicine and public health in the research has opened the door for further joint activities which, it is hoped, will result in a readier acceptance of psychiatry as a respectable member of the medical sciences.

3. *Therapeutic Effects of Family Attendance in the Psychiatric Ward.*—Traditionally, most hospitals allowed, on occasions even requested, the presence of a family member with the patient during hospitalization. With the introduction of modern hospital management and nursing, this practice began to fade away, or at least to be regarded as undesirable. The psychiatric ward of the University Hospital has, however, kept this practice up to the present and has started an objective study on its advantages and disadvantages from various angles.

The hypotheses derived from the observations of this practice in the past for this research project are the following:

(a) The presence of a family member should be helpful in the transitional adjustment of the patient to the new environ-

ment of the ward at the time of admission.

(b) The presence of a family member should provide opportunities for closer observation of the family relationship and thus assist in understanding some of the possible etiological inter-personal factors.

(c) The family member in the ward, through contacts with the staff and the other patients and their relatives, may learn about the nature of mental disorder and also the required attitude and may acquire some skill in dealing with the patient.

(d) The process of readjustment to the home environment should be made easier for the patient by the continuity provided by the presence of the family member and the understanding and skill acquired by the family.

The adverse effects of this practice are also being looked into, *e.g.*, the effects of the introduction of the complicated family interaction into the therapeutic situation, in particular to the nursing structure. It would make a great impact on future mental hospital services in Taiwan if this practice proves to have beneficial influences on the therapeutic situation.

4. *Epidemiological Follow-up Surveys of Mental Disorder in Three Communities.*—

This projected study is planned to commence in 1961 *i.e.*, 15 years after the previous surveys, and has two main inter-related purposes: (a) to ascertain the change with time in the prevalence of mental disorders in the communities which have undergone radical changes in terms of industrialization and ethnic composition and (b) to study, with more refined methodology and better trained personnel, the socio-environmental factors that may have a bearing on the occurrence and manifestation of different types of mental disorders. Longitudinal prospective studies of a general population are theoretically the ideal method for ascertaining the true incidence and also the natural history of mental disorder in a community. The immense practical difficulties involved both in terms of financial expenses and manpower, and the technical requirements of maintaining the stability of the population as well as the methodology employed, have led many researchers to refrain from the use of this method. It is felt that a follow-up survey

after a 15 years' interval may yield significant findings closely similar to life span prospective longitudinal studies while minimizing the practical difficulties. For this, Taiwan seems to offer good possibilities: the base line information, obtained 15 years ago, is available; the population, though having undergone considerable change in composition owing to the influx of the mainlanders, is well registered; and the same research team, with added experience, still maintains the same degree of interest in this study as 15 years ago. Some change in the methodology may, and undoubtedly will, take place. It is contemplated that, as well as repeating the census household visits, a 20% random sample may be used for more intensive investigations. The criteria adopted for the census investigation will be the same as used in the previous surveys, but may be slightly modified for the study of the random sample.

This research programme is, it is hoped, to be followed by a series of controlled studies to understand the meaning of the correlations between the differential rates of mental disorder in different sub-groups of the population. And, furthermore, another follow-up study 15 years later is also on the time-table of the research programme.

5. *Study of Child Development.*—Psychiatric work with Chinese children is again a completely new field, and the accumulated clinical experiences and some research data have presented a fund of information which does not easily fit into any of the more or less accepted schools of thought. The situation is made worse owing to the rapidly changing social circumstances which children are usually the first to perceive and respond to.

An example of the difficulties encountered may be taken from a research experience which has several parallels in the past. In the years 1947 and 1948 an attempt was made to establish a standardized intelligence test based on the Binet-Terman test and the Japanese Suzuki modification of the Binet test, the latter because of its cultural closeness to Chinese. After a pilot study of 50 children of different ages, a sample of 1,400 children of 5-12 years was chosen from three different schools, in addition to

a small number under the age of 5 directly from their homes. The investigator used at first Taiwanese dialect with small children and a mixture of Taiwanese dialect and Japanese (because Japanese was the official language until the end of the war) with the schoolchildren. After 6 months he found himself using less and less Japanese and in one year's time the use of Japanese was limited almost entirely to the fifth or sixth grade children. He was most puzzled to observe that, after giving the tests for a year, the facility for expression among schoolchildren was becoming extremely limited; for instance, they were unable to give a detailed description of concrete objects, and there was a poverty of abstract thinking for their age. It was thought at first that this might have been due to sampling bias—more children of poor mentality being tested in this particular period of the investigation, but it became clear, by re-testing some of the earlier subjects, that the enforced use of a new language, Mandarin Chinese, in the school was responsible for this restriction of expression. The scoring of the results obviously did not lend itself to any meaningful interpretation, and the whole project was called off temporarily until new patterns of communication and culture in general had established themselves in the community.

A longitudinal study of children from birth to early adulthood is being contemplated to obtain basic information about the patterns of growth and development. The main areas of investigation will be in the learning process, intellectual development, the patterns of relationship formation, attitudes to authority, and the development of the image of self in relation to the expectation of parents.

Many small pieces of research work have been completed or are in progress. It must be admitted, however, that the data obtained from all these research projects so far have added only very little to the fund of scientific knowledge of human behaviour, normal and abnormal, as compared with the vigorous and untiring efforts put into them. This was expected in view of the complex nature of human behaviour, and also of the limitation of the quantity and quality of our research personnel. Qualified

research personnel in psychiatry is difficult to obtain everywhere and it is particularly so in a place like Taiwan where no such personnel can be found ready-made. To obtain such a person, one must first find a young scientific brain, interest him in psychiatric science, find means for him to support himself throughout his psychiatric training, help him learn research technique through participation with research and then see to it that he takes up an academic career; every step of this process of "production" is vital to the end result. The same applies to the obtaining of non-psychiatric research personnel; acute needs are felt for a social scientist, an epidemiologist or biostatistician, and a geneticist, for the planned research projects. For success, the spirit of research should prevail in the Department and critical thinking pervade all activities. The Department is now fortunate in this respect, though still far from ideal. Four senior psychiatric instructors, one neurologist, one child psychiatrist, one clinical psychologist and one senior social worker are actively interested and engaged in research along with their teaching and clinical work. The effects on the junior staff and students have been quite remarkable.

CONCLUDING REMARKS

The mental health programme in Taiwan has made a modest start. The assistance, material and technical, and encouragement received from colleagues all over the world, through personal contacts or international, bilateral or private agencies, have played an important part in its development. To mention only a few: The American Bureau of Medical Aid to China, the Department of Psychiatry of the Harvard Medical School, the World Health Organization, the United States International Cooperation Administration Mission to China (Taiwan), the World Federation for Mental Health. The support given by the National Taiwan University and the Taiwan Provincial Health Administration has certainly been the key factor in the whole process of evolution. It is hoped that this assistance and goodwill will continue and increase to enable the mental programme to grow, looking forward to a day when it may take its

proper share in the advance of scientific knowledge as well as the welfare of mankind.

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LIMITATIONS OF MEDICAL TRADITIONS ON COMMUNITY MENTAL HEALTH PROGRAMS¹

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Adolf Meyer, in 1913, in addressing the International Congress of Medicine in London(1), declared :

The characteristic traits of a clinic for mental diseases according to my conception should be, first, service to the patient rather than to an administrative system ; second, elaboration of the study of the diseases rather than of means of wholesale handling of patients ; third, possibilities of following up the studies of nature's experiments beyond the hospital period, and preventive work through extramural efforts outside of the hospital . . . [and further] . . . I consider it of the greatest importance that the clinic may itself be responsible for the mental health work of a fairly well circumscribed unit of population so as to make possible studies of the social situation and of the dynamic factors which lead to the occurrence of mental derangement which must be attacked for purposes of prevention.

His words of a half century ago have much in common with the viewpoints that gave rise to the Columbia-Washington Heights Community Mental Health Project. The Project, now in its third year, has established a local community surrounding the Columbia-Presbyterian Medical Center as a laboratory for long term, intensive studies of mental health procedures, therapy and epidemiology of mental health by a university Department of Psychiatry and School of Public Health. The project's aims have been to survey and characterize this urban community as a basis for coordinated community mental health studies. The approach is based on the conviction that knowledge of community life and mental health needs, resources and attitudes is essential to the evaluation and

improvement over the years of preventive, therapeutic and rehabilitative services.

In establishing this project, the interest extended beyond the evolution of epidemiologic methods or studies of prevalence, although it was hoped that such would come too in the course of the work. Surveys are available from this country and abroad that provide fairly consistent minimal rates on the prevalence of the psychoses in a population, in contrast to almost complete absence of figures on incidence. Existent reports on prevalence with respect to the psychoneuroses and personality disturbances, however, reveal wide discrepancies ranging from estimates derived by house surveys, such as that of the Eastern Health District(2) in Baltimore some years ago, to reports from the Rennie studies of Midtown (3, 4), and the Leighton studies of Stirling County(5, 6). The sources of these discrepancies call for explanations that demand more sophisticated epidemiologic methods than are now available in the reporting systems developed in the field of psychiatry.

The vexing problems of our specialty which give rise to part of these discrepancies include the lack of uniform definitions for mental illness and mental health, insufficient data with which to examine and differentiate changes brought about by either the environment or treatment, and inadequately developed techniques for needed data-collection. Without the solution of these problems and the accumulation of sound information, it remains dubious that assessment of change through therapy can be effectively estimated. Thus, how can changes in patients be assessed without studying their social adaptation before, during and after treatment over periods of time? Need we not inquire into the epidemic effect of the patient's illness in his community? (The significance of the last question is exemplified by such findings as that 10% of the children seen in the Domestic Relations

¹ Read, at the 116th annual meeting of The American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

² From the Department of Psychiatry and the School of Public Health and Administrative Medicine, Columbia University, New York City.

Court of New York for problems of delinquency have one or both parents schizophrenic and that many of these parents have been in a mental hospital or in psychiatric treatment(7)).

The Columbia-Washington Heights Community Mental Health Project, grew out of concern with such questions. Its inception coincided with organizational changes in both the Department of Psychiatry and the School of Public Health and Administrative Medicine, brought about in part by the conviction that facilities and personnel of each should be rearranged in order to bear directly upon the service functions needed in the community and ultimately upon the training and research activities of both departments. Thus, the united energies of both departments might be turned to a series of systematic and intensive studies of various therapeutic techniques or mental health measures which would be examined against a known background of mental disturbance within a discrete population group and in the light of knowledge of the socio-cultural conditions in the area.

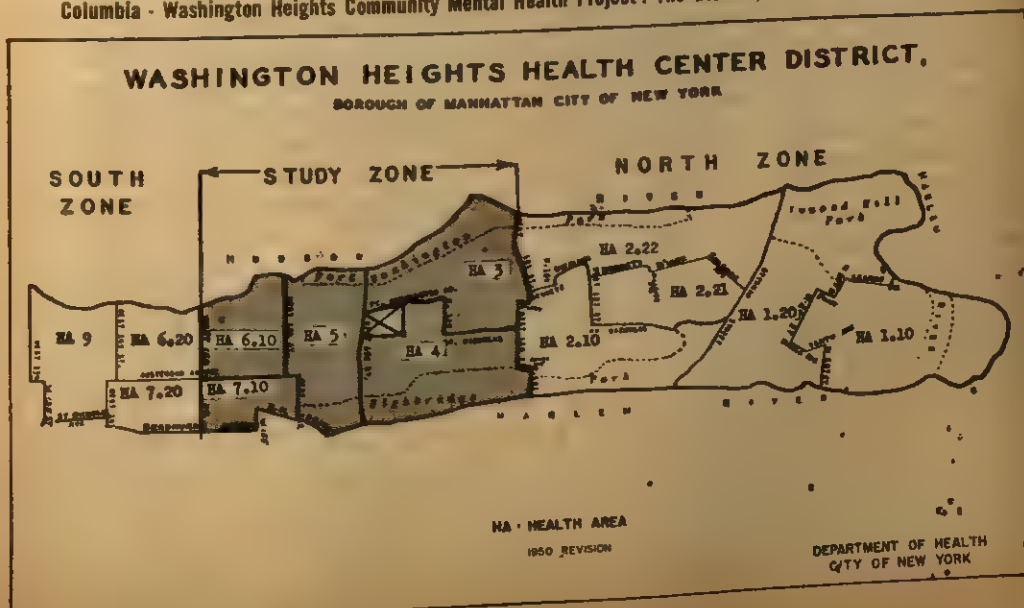
A small basic interprofessional staff has collected and analyzed demographic, sociological and historical data, and established a register of patients in the area which so far includes about 7,000 individuals. A master sampling study of 6,000 households is in

process which will enable the finding of patients not known to the medical profession or community agencies. Investigation is under way of community attitudes to mental health and illness and identification of potential leaders for community mental health programs. The project's staff has been drawn from the fields of psychiatry, public health, social psychology and psychiatric social work, with intermittent and part-time staff from biostatistics, political science and anthropology.³

The Washington Heights Health District has a population of approximately 281,000. Although this entire District is in the area of Project interest (in broad terms), a "Study Zone" has been demarcated within it as a unit of more manageable size for intensive study (see map). The "Study Zone," which immediately surrounds the Medical Center, contains a population of approximately 108,000, of diverse ethnic composition. The "Study Zone" cuts through two of the three traditional communities of the Washington Heights Health District and

³ Continuous assistance has been available from the research, teaching and clinical personnel at the Medical Center; we are especially indebted to Drs. Jack Elinson and Ernest Gruenberg for their sustained and close consultation. An advisory planning group from within the University has also provided valuable counsel.

Columbia - Washington Heights Community Mental Health Project: The District, Zones and Health Areas



is not a community in the customary sense of the word; that is, a collection of people with mutual interests and contacts. Most of the area is residential with supporting shopping centers. The population of the southern area (Hamilton Grange), is predominantly Negro and Puerto Rican. The mid-area (Washington Heights) radiates out from a trade center, with some of its leadership living outside the area. Its population is mainly Jewish and second generation Irish Catholic, with some whose background is Puerto Rican, or of Greek, Italian or other nationality. The population of the northern area (Inwood), most recently developed, is about evenly divided between Jews and mainly Irish descent Catholics, with a few Protestants, the majority of German background. Lower middle and working class groups are more prevalent than middle and upper-middle class groups for the area as a whole, in which a wide range of economic circumstances are found.

The demographic data point up a number of conditions conducive to stress. For instance, the population of the southern area, almost completely Negro and Puerto Rican, pays a median rent equivalent to that of the populations in the northern and middle areas for housing that is the most dilapidated. However, these Negro and Puerto Ricans received a lower income per capita, although their educational level closely approaches that of the other two population groups. Population shifts within the region, particularly from Negro and Puerto Rican expansion northwards, contribute to stress conditions in neighborhoods that are undergoing rapid changes in ethnic and racial composition. Another stress situation within the Study Zone provides a ready-made experimental opportunity with respect to variations in rates and kinds of emotional stress reactions. This situation stems from the enforced relocation of 1,800 families due to construction of new approaches to the George Washington Bridge. Study of relationships between psychosocial stress and psychiatric symptomology is relevant to planning community mental health programs. Such relationships were not taken into account in the past when many of the prevailing practices were established.

In the health district 189 institutions have

been identified that have some potential or actual relation to mental health services. These include health, educational and welfare facilities but not the 335 or so local physicians, with whom we are also attempting to establish cooperative contact. Within the Medical Center itself, an imposing list of specialized personnel and facilities give service of various kinds. In spite of this richness of resources, it has become clear that their effectiveness in operation is impeded by several factors. Traditional isolation of the various groups from each other often has prevented the flexible movement of patients from one unit to another in terms of their treatment needs. Such isolation has hindered the use of consultative services even when these are clinically indicated and available.

Existing personnel and psychiatric facilities are so organized that they often fail to serve local community mental health needs. For example, when the project started, only 2% of the annual admissions to the specialized psychiatric hospital came from the local community. All other patients requiring psychiatric hospitalization, whether from the other medical center units or elsewhere, had to seek aid at the city receiving hospital 150 city blocks away. Thus, the project study of organizational structure led to revised psychiatric admission policy in the medical center psychiatric units which has led to provision of service for a significantly increased proportion of the mentally ill from the local community. This in turn provided important leads for further fact-finding and programming at the community level. In this instance, as in many others, the collection of data and the patterning of services have had reciprocal influence on each other. The traditional design of epidemiologic research as linear sequence from data-gathering to service-design is seen as limiting to community mental health programming as compared with a circular process with reciprocal feed-back.

In general, work in the project has confirmed the early assumption that the data-gathering process itself constituted a community mental health activity, both in terms of adding a new and contributing unit and also in identifying obstacles and resistances to needed improvements which require

problem-solving. It was predicted that involvement of medical and nonmedical community leadership in data-gathering would help to stimulate the much needed assumption of responsibility and accountability by the community for care of its emotionally disturbed members. Interchanges for seeking information have the potential for increasing the recognition of mental illness and emotional maladjustment in the community as well as cooperation, communication and collaboration with other community groups for its alleviation. For example, some pilot interviews were undertaken with private practitioners in the area as a step towards completing the count of psychiatric patients in the Study Zone. Although these interviews centered on devising acceptable questionnaire forms, they also provided channels of communication in which the physicians' feelings about the local medical center, including complaints, were aired and explored, misunderstandings clarified, and constructive criticisms provided cues for needed improvement in medical center services. An appropriate referral by a previously hostile physician to Vanderbilt Clinic following such an interview illustrates how better communication achieved in data-gathering improves collaborative service to patients.

On the other hand, some of the barriers to data-collection which have been encountered, impede ascertaining the extent and nature of need which is necessary for planning, organizing and coordinating of services. These barriers often have been found to be due to well entrenched medical traditions that are inappropriate now for advances in modern psychiatry. They may be thought of as outmoded. Such barriers include certain recording practices as well as problems related to confidentiality. With respect to recording: the information that is recorded or fails to be recorded by psychiatric facilities, general hospitals and various agencies is determined mainly by what is deemed most useful and important (aside from such non-clinical factors as budget and staff pressures). The inpatient philosophy that still puts low value on coordination between units for pre- and post-hospital care and their preventive and rehabilitative potentials leads many inpatient psychiatric

facilities to neglect such data in their records. In general hospitals, traditionally lower prestige accorded to outpatient departments contributes to relatively lax record room procedures for outpatient charts. Since the greatest number of psychiatric patients (and also those seen at the most crucial phases of their disorders) are outpatients, such laxity limits both the research and service uses of these records. Furthermore, due to the tradition whereby somatic illness continues to hold higher scientific and moral status than psychiatric disorders, considerable reluctance was found in this study by general hospitals' record rooms to include recordings of primary or secondary psychiatric diagnoses even when such had been made on patients seen on medical and surgical wards. In many psychiatric, social and educational settings, the uneven and inadequate recording of relevant social and psychological data, seems due to traditional narrowness of professional focus by the respective disciplines established before the development and acceptance of such concepts as total personality and comprehensive psychiatry.

Another tradition-linked source of error arises from trying to circumvent anachronistic legislative and administrative policies through the choice of diagnosis to be recorded. Although this may be motivated by well-intentioned therapeutic expediency, such diagnostic manipulation creates obvious confusions and dangers and is scientifically untenable. It would seem far preferable to apply current psychiatric insight through appropriate change-inducing techniques, including community action, towards revising those long-standing policies and laws which obstruct the carrying out of clinically indicated case disposition.

As regards the maintenance of confidentiality of records, the authors are committed professionally to the ethical principles of protecting patients from the abuse of personal information they have given in confidence to qualified persons. It has been found, however, that traditional reluctance impedes release of such psychiatric information as names, addresses and diagnoses even when rigorous legal and research safeguards are in force. Indiscriminate withholding of such information seriously hampers the pooling of data essential for planning, utilization

and evaluation of community services. In determining the patient population of the area, the project benefited by valuable co-operation with the statistical office of the Department of Mental Hygiene, the New York City Community Mental Health Board, Manhattan After-Care Clinic, and the record room and various special units of the Presbyterian Hospital of New York. Initial efforts to obtain data from the smaller hospitals in the area and from various governmental departments have been hampered by fears of law suits, voiding of liability insurance or increase in the rates of such insurance. Yet the Medical Practices Act of the State of New York specifically allows release of such information for research purposes. The project staff has met with administrators of hospitals serving Washington Heights residents, representatives of the Board of Education and heads of private and public agencies, to explain and reassure them as to our scientific aims and safeguards with respect to needed data. Such conferences also have served to improve communication towards needed collaborators, coordination in the treatment of the area's patients.

Entrenched patterns of autonomy and isolation on the part of hospitals, clinics and agencies with respect to each other contribute to an antitherapeutic fractionation of patient care. Many longstanding organizational patterns which derive from overlapping governmental units and systems of patient referral disregard continuity of care. The splintering of services between the local voluntary hospitals and clinics, the city hospital, the state hospitals and after-care clinics and agencies, fails to allow the establish-

ment of the major psychodynamic factor needed for the treatment of many psychiatric patients; i.e., a sustained and consistent therapeutic contact with a single physician or his representative institution, who is also knowledgeable about the patient's family and community environment. It was found, for example, that 33 different hospitals and schools took care of 636 patients from the Study Zone population of 108,000 in one year and also that patients from this small metropolitan area for the most part were distributed among nine State hospitals scattered over an area extending to a peripheral distance of eighty miles (Table 1). Hospitalization at long distances from home markedly reduces helpful contacts between the patient and his local community. Visits by relatives and social workers become difficult and the hospital staff must rely on transmitted information from a multitude of distant agencies which cannot provide the intimate type of professional or family contact so important for the patient's posthospital readjustment in the community.

Since it has been repeatedly demonstrated that the readjustment of many hospitalized patients is improved by working concomitantly with their families, the extent to which this has not yet been translated into practice generally, exemplifies the many lags between existent clinical understanding of individual patients and its application at the collective level of patient care, where the relative inflexibility of tradition is greater. Psychological mechanisms of isolation and compartmentalizing on the part of the general public and the mental health professions would seem to contribute to this inertia for maintaining the procedural

TABLE 1
Washington Heights Residents Admitted to Records of
State Department of Mental Hygiene
April 1, 1956 - March 31, 1957

TYPE OF INSTITUTION	NUMBER OF INSTITUTIONS REPORTING			PERSONS ADMITTED		
	STATE	PRIVATE	TOTAL	STATE	PRIVATE	TOTAL
Hospitals	13	14	27	469	139	608
Schools	4	2	6	25	3	28
Total	17	16	33	494	142	636

status-quo for patients *en masse*, which curtails their benefits from advances in psychiatry. (As referred to above, the project is investigating attitudes towards community mental health programs; the results will be reported separately).

Psychiatric services in general hospitals, especially when closely related to teaching and research activities, are key components of the community's psychiatric resources. Yet, certain traditions that shape many features of general hospital organizational structure, which developed in relation to physical care, are detrimental to psychiatric practice and may seriously limit effective psychiatric treatment in this propitious setting. Traditionally, for example, inpatient services which care for the physically sicker and more complicated patients, receive for their staff the most highly qualified physicians and provide for these men higher professional prestige than outpatient departments where less experienced physicians are usually assigned. But for community oriented psychiatry, the outpatient department demands primary importance and requires high levels of professional expertness.

In studying the general admission process to the outpatient department of the local medical center (a general hospital), it was found that of the 450 new patients registering daily, 80 were seen for only the single brief visit and returned home. A follow-up study of these patients has revealed that a high proportion suffered from some form of psychiatric illness which went undetected or ignored during the clinic admission procedure.

In thinking of the process of acceptance of patients for outpatient treatment in the large teaching centers, it appears that the traditional assignment of a medical or surgical intern with minimal psychiatric background as hospital admissions officer results often in his inability to recognize psychiatric problems as such, to make adequate referrals, or to manage the problem himself. For the most part, those patients that he does refer to the psychiatric clinic have gross disturbances while the subtle indications of early illness are missed. In actuality, initial screening and early disposition requires highly specialized skill and, of course, has crucial relevance to early case finding and

appropriate use of existing facilities. Thus, the assignment of the most junior physicians as admitting and emergency officers, a tradition with some logical basis in relation to physical illness, proves detrimental with respect to care of psychiatric illness. (The intern serving as admitting officer for the physically sick is apt to refer problems of serious nature into the hospital rather than assume responsibility for their referral or care, thereby providing a factor of safety for such a patient.)

In the larger teaching centers, also, admitting interns are influenced by their conception of "the good case," as indicated to them by their senior inpatient instructors. Such interns, however, are often uninstructed relative to the personality disorders and unable to estimate the ultimate consequences to the patient of how they refer or fail to refer. Many psychiatric cases are seen as a nuisance unless critically upset, to be sent home or referred back to the local physician or hospital whose inability to provide appropriate and needed treatment caused the patient to seek admission to the medical center in the first place.⁴

Comparable shortcomings were found through a follow-up study of 38 children who had been referred for psychological testing by the pediatric service. The care that had been given was evaluated as satisfactory in but 7 of the 38 cases. Only 10 out of 32 recommendations for 23 of these cases had been carried out. Traditional patterns of organization, rotation of responsibility and poor interdepartmental communication within the medical center accounted for these findings in part, while others seemed due to deficiencies of collaboration between the hospital and the schools and agencies in the community. There is basis to assume that those kinds of problems are typical for other large urban hospitals and clinics.

Four hundred and sixty-nine patients from Washington Heights were admitted to the psychiatric service at Bellevue Hospital (the city receiving hospital) during one

⁴ This is not to be misconstrued as unjust criticism of interns, who are themselves caught up in these problems. Documentation will be made available through a separate report of our follow-up studies of patients who were turned away during the admission process.

year. Of these, about 40% were transferred to State hospitals. By study of the records of the remaining 60%, the evidence seems to point to serious gaps in the local network of facilities, as well as to weaknesses in community patterns of initial screening, referral practices and discharge planning. For many of these patients, admission to city hospital reflects poor clinical use of more suitable community alternatives. Not only may this inflict damaging trauma, but reduce ultimate treatability. For others in this group of patients, the Bellevue admission occurred because more appropriate community resources were lacking. Thus, about 43% of the cases returned to the community were associated with alcoholic intoxication. Facilities for the care of addictive personalities, whether associated with the use of alcohol or narcotics, are quite inadequate. This inadequacy has been perpetuated by traditional attitudes of moral condemnation towards the addicted; even the professional community has shared these prevailing attitudes, to the detriment of its clinical objectivity.

SUMMARY

A series of entrenched medical traditions has been recognized as obstructive for the development of effective mental health practices and the on-going assessments of patient care. Traditional patterns of isolation within and between medical and non-medical facilities of the community's resources contribute to maintenance of weak patterns of coordination, communication and fulfillment of responsibility with consequent antitherapeutic fractionation, discontinuity and inflexibility of services. Some organizational traditions in state hospital systems, such as distance from the patient's home and poor liaison with other community facilities, impede postdischarge readjustment. In general hospitals the old tradition of placing those with greater professional experience on inpatient services which led to enhancement of their prestige is detrimental to the growth and strengthening of the admissions office and the outpatient departments which have major importance for community mental health programs, and require high levels of pro-

fessional expertness. These factors are reflected in traditional organizational features of general hospitals, and influence staffing patterns and admissions procedures and policies that are now adverse to early detection and treatment of psychiatric illness. They lead to incomplete and inaccurate recording of psychiatric diagnoses and minimal attention to outpatient charts. By identifying these traditions and the obstacles they raise, it is hoped that appropriate revisions come about which will lead to more effective patient care.

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DISCUSSION

CURTIS G. SOUTHARD, M.D. (Bethesda, Md.).—This Project is pilot and exploratory in nature. Its goals incorporate many of the new and progressive concepts about community care and treatment of the mentally ill. Mental health services are combined with training and research in a community setting, a program which ought to be more common throughout the country. The authors give convincing evidence of the reciprocal feedback between data gathering and service design which is vital to the development of program. This should remind us that data gathering should not be considered a nuisance but as a continuing part of the effort necessary to effect change to meet community needs. Of course, budget and staff must be provided to make this possible.

The Project seems to be focused primarily upon the mentally ill. Preventive and promotional services, public health activities which reach the mass of the population, the healthy

as well as the sick, are lacking. However, mention was made of social and economic pressures in the community which might cause mental illness. Undoubtedly information and communication provided by the program as presently focused would be of great value for developing a preventive program later. If this is done, I believe that a completely new set of reference points in the community will be needed and that professional staff other than clinicians will be active participants.

From the administrative, organizational point of view, if the project is to be regarded as a demonstration of community mental health programming for other communities, many public health personnel would raise questions about locating the central core of a community mental health program in a hospital.

Also I'm not sure to what extent a neighborhood or a part of a neighborhood in a large city can be considered as a "community." In a place like New York City, which is overwhelming in its size and complexity, perhaps the neighborhood approach may be compared to the attempts to divide a large mental hospital into several smaller, quasi-independent hospitals of manageable size.

The Project experience thus far indicates that certain traditions limit mental health programs. I wish the authors had had more time so that the second section of the paper on the limitations of medical traditions could have been discussed in more detail. Each tradition by itself could form the basis for a separate paper. In relation to the brief statement on confidentiality, for example, I would have liked to have the following points reviewed: What is the history of the development of this tradition? What purposes does it serve? How seriously does this tradition interfere with research or the planning of community health services? To what extent is the experience in the Washington Heights area typical of other parts of the country? If the tradition should be changed, what changes are needed?

The tradition of maintaining confidentiality seems to have been a significant hinderance to the study and probably will be less amenable to change than other traditions. Perhaps the tradition of maintaining confidentiality need not be changed but a better understanding of the permissible use of records should be encouraged.

To my mind the most significant obstacles described were the isolation, lack of coordination and communication in the community's mental health facilities. This is a nationwide and not just a medical problem. It is a basic

problem of the organizations of our society which results in part from the increasing complexity and specialization of our activities, from urbanization, and from the massive growth of our population.

The admission service for hospitals as it affects psychiatric referrals is emphasized in this paper. I think some considerations were omitted which could lead to erroneous conclusions on this subject. Having an intern as admission officer was properly referred to as a problem and I would agree that it may be a costly procedure for both patient and hospital. However, data were cited to indicate that the intern is more accurate in his somatic diagnoses and referrals than in psychiatric cases. Granted that the intern may not have had sufficient psychiatric training and experience, I doubt if the problem results entirely from these lacks. The intern may know that the outpatient department and hospital are crowded and only the seriously mentally ill would receive attention. He may be very well aware that a psychiatric referral involves a lot more than sending a note to E.N.T. that a patient needs care for a cinder in his eye. Also there is the matter of acceptance of the illness and of the referral by the patient and his family plus the feelings of the intern about directing patients to a psychiatrist, which is difficult even for many experienced physicians.

The lack of proper facilities for early treatment and follow-up of cases treated at Bellevue appears to illustrate a critical problem which is common throughout the country. I am optimistic that this Project will go a long way towards solving it in the Washington Heights area of New York City.

Despite the limitations of medical traditions, the authors appear to have made marked progress in putting their program in operation. Examples were given which indicate that medical staff can change. We could speculate that change will take place readily if the administrative machinery will allow it and if personnel are kept abreast of new findings.

In closing, I would like to point out that the authors have tackled what many health authorities believe is the biggest problem facing psychiatry and public health today; that is developing adequate facilities, properly utilized, to carry out a comprehensive mental health program for prevention and treatment of mental illness. There are only a few projects of this nature in this country—there should be more. I congratulate the authors on the fine beginning they have made and I am sure that program directors throughout the country will follow their work closely!

EFFECTS OF CHEMICAL STIMULATION TO DISCRETE BRAIN AREAS^{1, 2}

ROBERT G. HEATH, M.D., AND FLORIS de BALBIAN VERSTER, Ph.D.^{3, 4}

In this report, we describe some of our findings concerning the effects of stimulation, by a number of chemicals, to discrete brain regions, and the techniques which we have developed for the procedure. Data to be presented were obtained from studies with cats, monkeys and human subjects. Most of the studies were conducted with monkeys; brief references will be made to pertinent data from our cat studies. Human data will be included in regard to subjective reporting immediately following the chemical stimulation where they will clarify some of the objective findings with monkeys. We plan to report our human data in detail after sufficient time has elapsed for adequate follow-up studies.

This method of investigation and treatment has evolved as an extension of our subcortical electrode studies and, in each instance, has been employed in conjunction with chronically implanted cortical and subcortical electrodes.

MATERIAL AND METHOD

Seventeen (17) Rhesus monkeys were employed in this study. Techniques were improved throughout the period of the study. The chemicals were introduced into precise, intracerebral regions through modified hypodermic needles and through specially constructed perfusion cannulas (to be described) for intracerebral stimulation. The modified stereotaxic apparatus was employed with air encephalography for the placement of the electrodes and the needles or cannulas. (A minor modification of our implantation technique for chronic electrodes⁽¹⁾ is necessary for cannula implanta-

tion.) Each needle or cannula was implanted through a small trephine hole and fixed at the bone. Quick-hardening dental cement was used to fix the needles in position and a special plastic plug was designed to fix the perfusion cannula. In our earlier studies with animals (15 cats, 12 monkeys), the needles were placed in widely dispersed nuclear masses; in the later animal studies (2 cats, 5 monkeys), placements were into the septal region and the hippocampus because these areas were the most sensitive to the chemicals employed. In the 2 human subjects (one, a post-encephalitic brain syndrome; the other, a chronic, catatonic schizophrenic), cannulas were implanted into the septal region bilaterally. In addition, cannulas were implanted in both hippocampal regions of one human subject, and in one hippocampal region in the other human subject (Figure 1). In the animals and in the human subjects, electrodes were implanted in specific, subcortical nuclear regions, and over the cortex with the technique previously described⁽¹⁾.

No animal was employed in the study until a minimum of 7 days had elapsed following implantation of the electrodes and cannulas or needles. During the first 7 days following operation, artifacts consequent to the surgical procedure are present. Each animal was used on a number of occasions. At the conclusion of the study, the valves or needles were checked for patency and localization with a small amount of opaque media (Urokon Sodium Sterile Solution 70%, Mallinckrodt). The animal was then sacrificed, and the brain sectioned and stained with Kluver's Combined Stain. The sites of electrode implantation were ascertained, and the sites of injection examined for possible cellular damage.

In 3 instances, when the modified hypodermic needles were employed, there were complicating abscesses around one of the needle tracts. All data obtained from these animals were discarded from the study.

¹ Read at the 116th annual meeting of The American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

² Supported by grant-in-aid from the Commonwealth Fund.

³ Tulane University School of Medicine, New Orleans, La.

⁴ With the technical assistance of Charles Fontana and Stanley John.

FIGURE 1

Lateral and Anterior-posterior X-rays of Skull of Human Subject (R.B.) Showing Cannulas in Septal Region and in each Hippocampus and Numerous Subcortical and Cortical Electrodes. The Wavy, Opaque Lines in the Vicinity of Sella Turcica are Opaque Markings in the Gauze Employed in the Operation

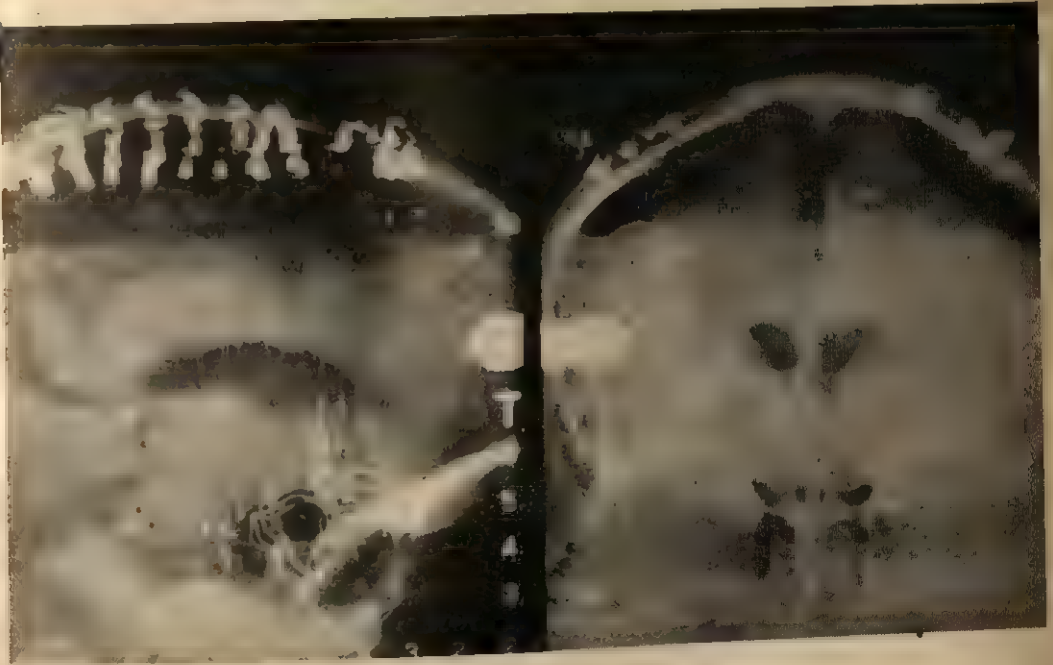


FIGURE 4

Section of Cat Brain Showing Sites of Injection of Septal Extract



A Perfusion Cannula for Intracerebral Microinjections: This device is adapted for use with the stereotaxic instrument and consists of a valve to which is attached a length of polyethylene tubing. Our procedure for implanting subcortical electrodes(1), with minor modifications, is employed for placing the subcortical valves. This procedure eliminates the shortcomings of our earlier techniques and meets the following essential criteria for an effective method.

1. **Localization.** It must be possible to inject exactly into a predetermined target area. Fixation methods must be such that the device remains accurately in place for prolonged periods.

2. **Minimal destruction of brain tissue.** The device should be of relatively small diameter. It also should be flexible to eliminate damage from pulsation of the brain.

3. **Asepsis.** The device must be designed and implanted in a manner to eliminate pathways for the entry of bacteria into the brain.

4. **Flushing.** In order that cross-contamination of one compound with another does not occur, the device must provide a method of flushing without entry of the flushed material into the brain.

5. **Volumetric accuracy.** Provision must be made for delivery of accurate volume at the tip of the cannula.

Details of the construction of the perfusion cannula have been presented elsewhere (2). Basically, the cannula consists of a small polyethylene tube inside of a larger tube (#PE-10 and #PE-60) with a reservoir and valve system at the intracerebral

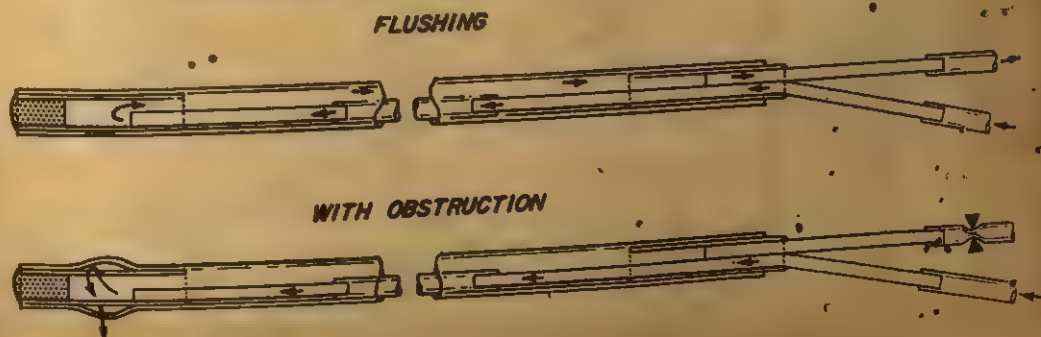
end. The terminal, i.e., intracerebral end, is attached to a specially designed valve. The inner polyethylene tube is the inlet and the larger tube serves as an outlet. After flushing, the outlet tube is clamped, and the injection of a micro amount of fluid then causes the valve to open (Figure 2). The cannula is fixed to the bone by a specially designed Lucite plug. This plug also fixes the intracerebral electrodes into position(2).

The maximum quantity of solution injected into the brain substances, with our earlier techniques employing the needles, was 0.1 ml. With the development of the perfusion cannula and, thereby, greater control of volumetric accuracy, the quantity of solution injected did not exceed 0.02 ml., and, generally, ranged between 0.01 ml. and 0.02 ml.

A number of basic studies were carried out with animals to check the various aspects of this technique. To ascertain the period of time that the injected compounds remained in the brain, radioisotopic histamine was injected through the chronically implanted needles into the brains of cats. The animals were sacrificed at regular intervals following injection and the brains homogenized and analyzed for isotope content. As shown in Figure 3, the level of the chemical in the brain remained relatively constant for a period of 2 to 3 hours following injection; then, was rapidly eliminated. When the chemical was injected into the ventricle and sub-dural space, it was eliminated rapidly from the brain. We have noted that when histamine, one of the

FIGURE 2

Schematic Diagram Illustrating the Mechanism of Action of the Intracerebral Cannula



chemicals employed in these studies, produced a physiological effect, as indicated by subcortical electrical recordings, the physiological changes persisted for approximately the same length of time as the chemicals remained in the brain, as ascertained by radioisotopic studies.

Studies have been reported(3) to suggest that inorganic compounds, which become incorporated into the tissues when injected into the brain, remain for very prolonged periods, i.e., up to several months. In our studies, we employed only organic compounds which are metabolized and excreted.

RESULTS

The chemicals which were tested in the monkeys are listed in Table 1. The com-

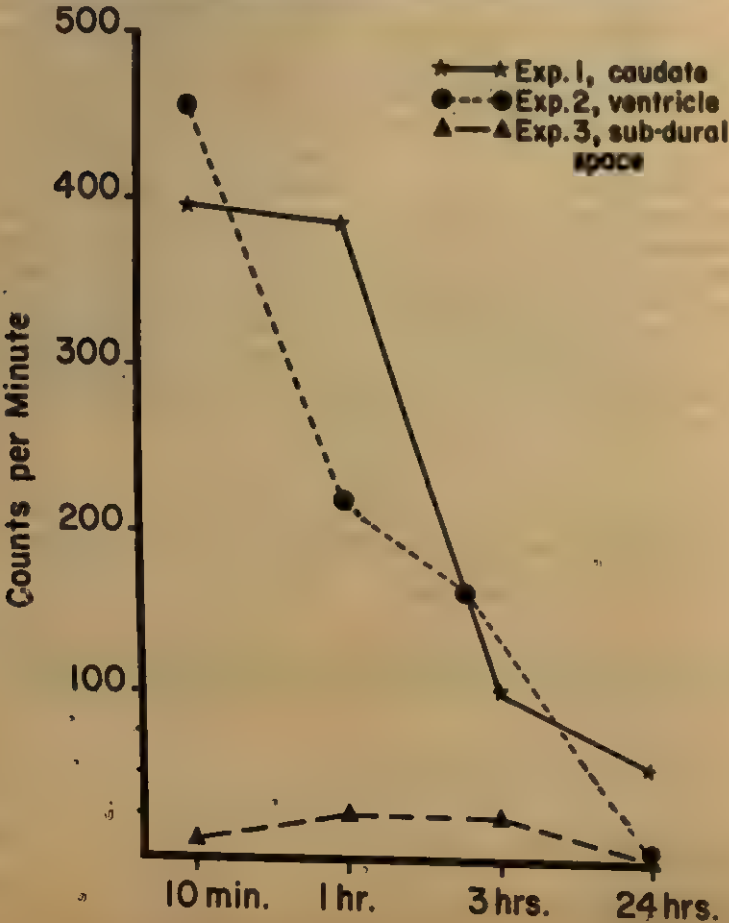
TABLE 1
List of Compounds Given by Intracerebral Injections
(Active Compounds are Capitalized)

Acetylcholine	Manganous chloride
ATROPINE	IPROMIAZID
d-Amphetamine	Isoniazid
Diamine oxidase	PHENOBARBITAL
EPINEPHRINE	Potassium
Gamma-amino-butyric acid	Saline
HISTAMINE	Sodium chloride
1-Isoleucine	Serotonin
Kabi 888	SEPTAL EXTRACT
1-Leucine	Tyrode solution
LEVARTERENOL	Valine
d-LYSERGIC ACID DIETHYLAMIDE	

pounds which induced a change in behavior or in the electrical recordings are shown in capital letters. A significant observation,

FIGURE 3

Graph Depicting the Rate of Disappearance of Radioactive Histamine from Cat Brain with Injections Into Caudate Nucleus, Ventricle, and Sub-dural Space



in reviewing the over-all chart, is that so few compounds with established neurochemical action peripherally induced changes in recordings or behavior.

Unquestionable behavioral changes which, invariably, were associated with significant alterations in recordings, appeared only when chemicals were injected into the septal region and hippocampus. No significant alterations in behavior were induced by injection into other subcortical nuclear masses which included the caudate nucleus, the hypothalamus, and the putamen. For this reason, in our later studies, we confined the placement of our limited number of cannulas to the septal region and the hippocampus. In a few instances, alterations in recordings were definite with no observable behavioral changes in the monkeys.

Regional Localization of Responses to Chemical Stimulation: Our studies suggested that the regions where chemical stimulation induced changes in behavior and recordings were well circumscribed. Injection into a region only 2 or 3 millimeters removed from a very active site often induced no change. The cross-section of the brain of a cat employed in one study illustrates this phenomenon (Figure 4); this was an unfriendly, uncooperative cat. Septal extract,⁵ when injected into the left septal region at the site indicated in Figure 4, immediately induced a mild catatonic picture followed by purring and placidity in the animal which persisted for 30 minutes. Injection of the same amount

⁵ This extract consisted of bovine septal tissues digested with commercial trypsin.

TABLE 2
Active Intracerebral Compounds

COMPOUND	DOSE RANGE	REGION	NO. OF ANIMALS	NO. OF INJECTIONS	EEG	BEHAVIOR
SEPTAL EXTRACT	0.4 units -	Septal	4	8	Septal area seizure 4	Dazed 3
	0.8 units				Sub-clinical seizure activity 1	Agitated, flushed 3
					18-20 cps activity 1	No change 2
					No change 2	
	0.4 units -	Hippocampus	3	3	Hippocampal seizure activity 2	Frightened, agitated 2
	0.8 units				No change 1	No change 1
	0.4 units -	Hypothalamus	2	3	Sleep patterns 1	Drowsy 1
	0.8 units				No change 2	No change 2
HISTAMINE	5 ug. -	Septal	10	33	Slowing and spiking activity 5	Posturing, catatonic 7
	200 ug.				Varying degrees of slowing 12	Mildly out-of-contact 5
					Flattened record 2	Reduced activity 3
					High amplitude alpha-like waves 1	More active 2
					Drowsy and/or sleep patterns 2	No change 16
					No change 11	
	5 ug. -	Hippocampus	7	20	Seizure activity 3	Dazed & inappropriate during seizure 2
	100 ug.				Increase in fast amplitude 2	Drowsy 2
					Flattened record 1	Somewhat alerted 3
					Sleep patterns 1	No change 13
					High amplitude delta focus 1	
					No change 12	
	5 ug. -	Hypothalamus	8	19	Drowsy and/or sleep patterns 5	Mildly out-of-contact 4
	100 ug.				Increase in low-range beta 1	Drowsy 2
					Flattened record 2	Somewhat alerted 3
					Generalized slowing 2	No change 10
					No change 9	
	20 ug. -	Caudate	2	7	More relaxed pattern 1	Slightly agitated 2
	200 ug.				Sleep pattern 1	Drowsy 4
					No change 5	No change 1
ATROPINE	100 ug.	Septal	2	4	Anterior septal spikes 3	No change 4
					No change 1	
	100 ug.	Hippocampus	1	1	No change 1	No change 1

of the same septal extract into the right hemisphere at a site 2 millimeters lateral to the septal region, as indicated, did not induce any observable behavioral change. In this animal, the experiment was repeated on 32 occasions on different days with the same result each time.

Effectiveness of Different Compounds : The 3 compounds, in the group we tested, which induced the most intense changes were septal extract, atropine, and histamine (see Table 2). The injection of septal extract and atropine almost invariably induced changes. The response to histamine was less consistent: on some occasions, it was followed by marked change; on other occasions, by minimal change; on still other occasions, by no change. Variable

responses occurred with the injection of epinephrine, iproniazid, d-LSD, and levarterenol (see Table 3).

With septal extract, behavioral changes were most marked with injections into the septal region, and somewhat less intense with stimulation to the hippocampus. The monkeys became more placid, stopped biting and scratching when prodded, and seemed generally more content. Profound alterations occurred in electrical recordings (Figure 5), best characterized as seizural activity focal in nature and restricted to the septal region and hippocampus. This activity persisted for long periods, the most extreme being 3 days of continuous paroxysmal activity followed by intermittent activity of this type for 6 weeks. The short-

TABLE 3
Mildly Active Intracerebral Compounds

COMPOUND	DOSE RANGE	REGION	NO. OF ANIMALS	NO. OF INJECTIONS	EEG	BEHAVIOR
LEVARTERENOL	20 ug. -	Septal	3	3	Sleep patterns 1	Slightly docile 1
	200 ug.				No change 2	No change 2
	20 ug. -	Hippocampus	3	3	No change 3	No change 3
	200 ug.					
	20 ug. -	Hypothalamus	3	3	Relaxed pattern 1	Somulant 1
	200 ug.				No change 2	No change 2
IPRONIAZID	200 ug.	Caudate	1	1	Sleep patterns 1	Sleep 1
	20 ug.	Septal	2	3	Slowing & increase in amplitude 1 Larger runs of beta 1	No change 3
	20 ug.	Hippocampus	2	2	No change 1 Slight slowing 1	No change 2
	20 ug.	Hypothalamus	2	2	No change 1 Slowing & increase in amplitude 1	No change 2
EPINEPHRINE	10 ug. -	Septal	4	6	Sleep patterns 1	Sleep 1
	210 ug.				No change 5	No change 5
	10 ug. -	Hippocampus	3	4	Increased beta 1 Sub-clinical seizure activity 1	No change 4
	100 ug.				No change 2	
	10 ug. -	Hypothalamus	4	5	Sleep patterns 1	No change 5
	100 ug.				Increased beta 1 No change 3	
d-LYSERGIC ACID DIETHYLAMIDE	25 ug. -	Caudate	2	2	No change 2	No change 2
	100 ug.					
	10 ug.	Septal	2	2	Moderate slowing 1	Reduced behavior 1
	10 ug.	Hippocampus	2	2	No change 1 No change 2	No change 1 Agitated 1
	10 ug.	Hypothalamus	2	2	No change 2	No change 1
	10 ug.	Caudate	1	1	No change 1	No change 2 Slightly alerted 1

FIGURE 5

Subcortical and Cortical Recordings from Rhesus Monkey Before and Following The Injection of Septal Extract into the Septal region

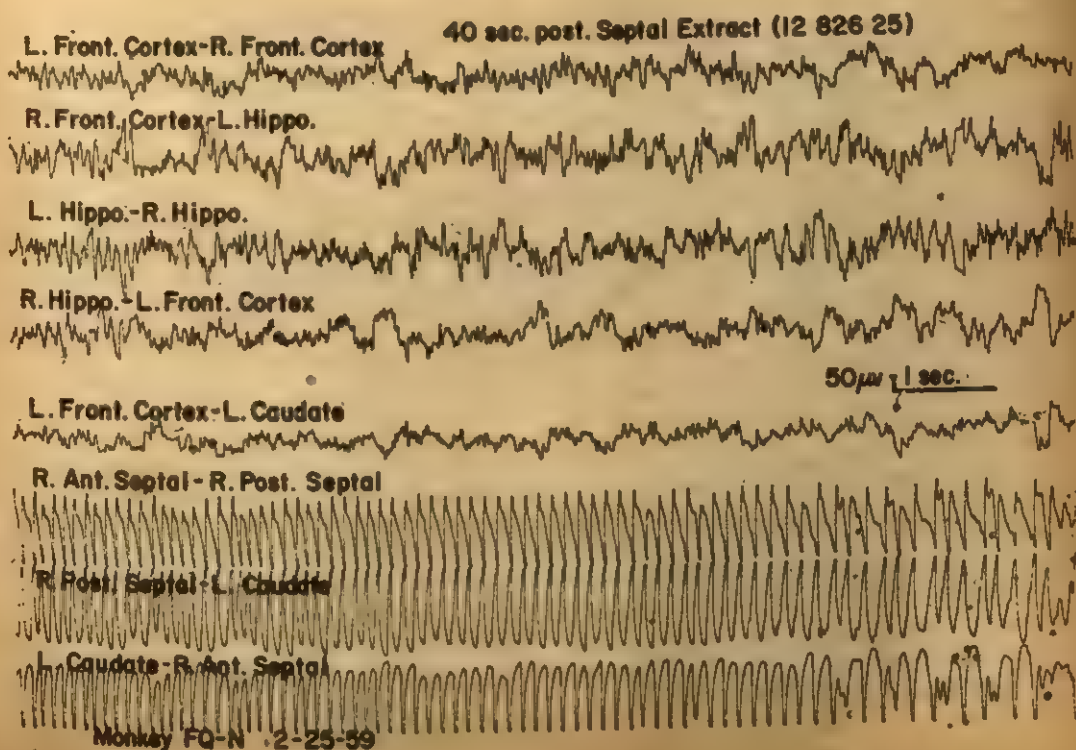
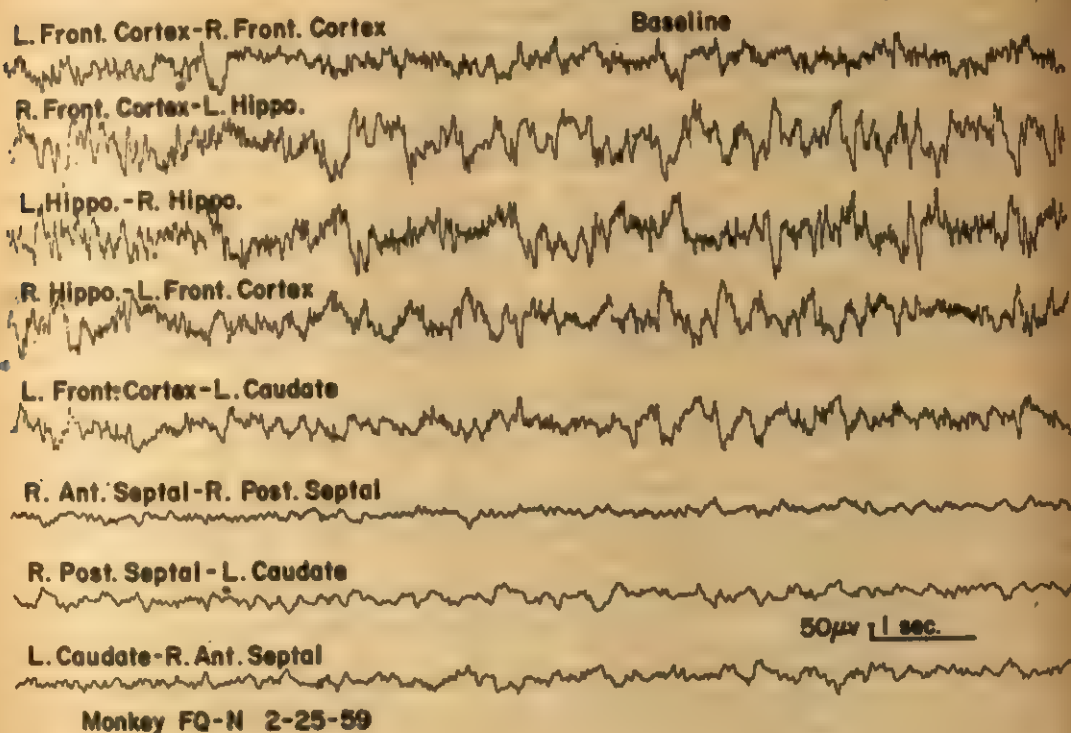
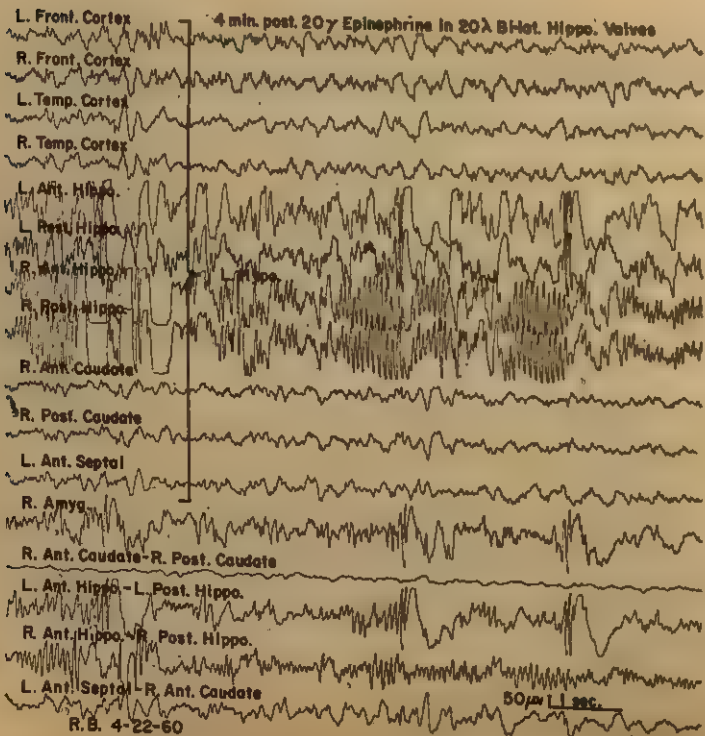
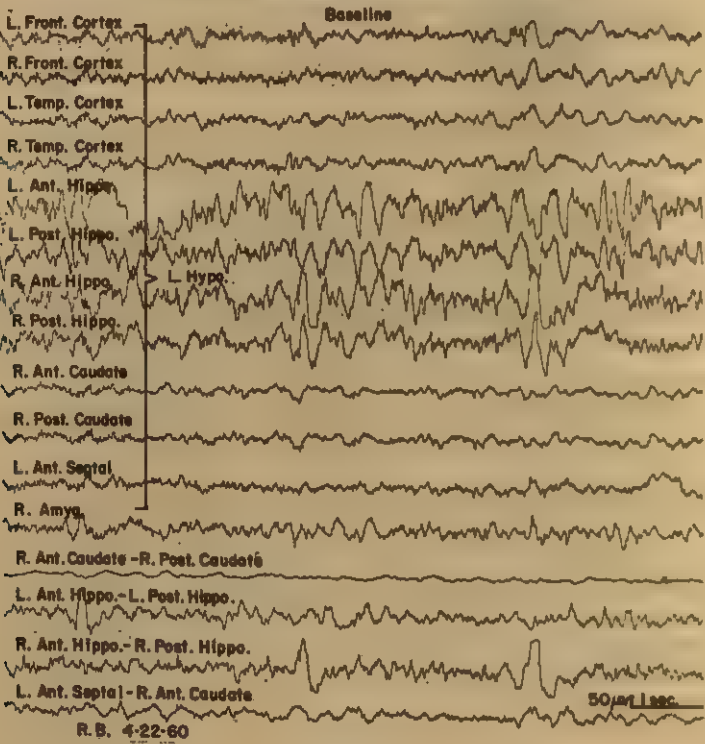


FIGURE 6

Subcortical and Cortical Recordings from Patient, R.B., Before and Following the Injection of Epinephrine into the Hippocampus



est duration of this activity, following injection of active septal extract, was a period of several hours.

Very little information is available as yet as to the chemical composition and stability of the septal extracts. Different methods have been employed in preparing the extracts and there is variability in their chemical composition and in their activity with our testing. The extract contains a large number of amino acids, peptides, and variable, but quite high, quantities of electrolytes. After measuring the electrolytes in the septal extract, we administered, as a control, a triple concentration of sodium and potassium chloride with no effect. Gamma-amino-butyric acid is a consistent constituent of the extract and has no effect when injected intracerebrally (see Table 1). The extracts gradually lose activity over a period of several months, as determined by this test, even when held in the lyophilized state under refrigeration.

Responses to histamine are quite variable, not only from one animal to the next, but with injections on different days in the same animal. Behavioral manifestations range from no change through a mild reduction in the level of awareness to a full-blown catatonic picture. On some occasions, there is a mild increase in beta rhythm on the recording. With a reduction in the level of awareness (clinical observation), there usually was some evidence of slowing in the septal and hippocampal leads. The full-blown, catatonic picture was associated with profound slowing in the septal region and the hippocampus with frequent spikes of the type we have described as appearing in recordings from these regions in our psychotic, schizophrenic patients. Recording and behavioral effects persisted for 1 to 3 hours.

The injection of atropine consistently has induced clear-cut alterations in recordings. Characteristically, there appears, at intervals of 2 to 4 seconds, a broad base slow spike in the recordings from the tissue into which the chemical was injected. Behavioral changes with atropine have been minimal. In the animals, there was nothing definite—only a suggested change towards increased relaxation. Recording changes following injection with atropine persisted

in the animals for 1 to 3 hours. In the human patient with brain damage, very little alteration in behavior was noted with the injection of atropine. Perhaps the subject was slightly more relaxed during the $1\frac{1}{2}$ hour period that spikes, induced by the injection, were present in the recording. The schizophrenic patient developed an increase in spiking in the septal region and the hippocampus. Occasionally, spikes were present in her pre-injection baseline (although sharper, and of higher amplitude), but they increased markedly in frequency following the injection of atropine. She became more agitated and the picture changed from one of retarded catatonic to one of agitation.

The second group of compounds, i.e., those that produced minimal and variable effects which were not consistently repeatable, included epinephrine, d-LSD, iproniazid, and levarterenol. Following injection of these compounds, the animals appeared slightly more relaxed, tended to become more drowsy, and the recordings were commensurate with the behavioral changes in that they showed increased production of alpha activity and background synchronous activity of a sleep pattern. Changes in recordings in the patient with brain damage, with the introduction of these compounds, were minimal, as with the monkeys. In the catatonic, schizophrenic patient, the high amplitude pattern of spindling appeared in the hippocampus, as shown in Figure 6, after the injection of 20 gamma of epinephrine into that region. The patient was relaxed, calm, and more cooperative.

DISCUSSION

The intracerebral chemical stimulation is an extension of our depth electrode studies. With the technique we developed for implanting electrodes in animals, and later in patients, we collected data demonstrating correlations between electrical activity of the brain and alterations in behavior. Significant recordings, correlating with the behavioral changes, were obtained from the septal region and hippocampus. Changing levels of psychological awareness, whether spontaneous or induced by the administration of exogenous substances (viz., pharmacological compounds), or by the

manipulation of interpersonal relationships, were accompanied by predictable recording changes from these regions. These data have been the subject of numerous reports from our laboratories since 1950(4-7). The recording data, along with consideration of the effects of ablation and stimulation of specific subcortical regions in animals, provided the basis for our assumption that electrical stimulation to the septal region might be of therapeutic value in schizophrenic patients.

Since 1950, we have chronically implanted electrodes on 55 occasions in human subjects. All patients received stimulation to discrete, subcortical nuclear masses(7). Many different parameters of electrical stimulation have been employed. The most striking benefits in behavior were achieved with stimulation to the septal region. In 1952(4), we described the pleasure responses or "good feelings" which patients reported with stimulation to this region, accompanied by objective changes in the direction of immediate alerting. Although this desirable, immediate response was consistent, we have been disappointed in the long-term effects of this procedure. In our studies with humans, we have not been able to induce this pleasure-yielding response by stimulating other subcortical regions. In response to stimulation to other regions, patients either have reported no change or have complained of varying degrees of discomfort. Several other investigators(8, 9, 10) subsequently described behavioral effects with stimulation to discrete brain regions in animals. Descriptions of pleasure response in animals to stimulation of areas, in addition to the septal region, are not in keeping with our experience with human subjects.

The therapeutic limitation of electrical stimulation led us to explore the possibilities of intracerebral chemical stimulation in the hope that the widened parameters of stimulation might prove more effective therapeutically in the treatment of behavioral disorders. Technical improvements ultimately made it possible to extend these studies to human patients.

The interesting and dramatic response in monkeys following stimulation with septal extract and histamine are, in our opinion,

of considerable significance. The septal extract elicits these reactions only when injected into the septal region, suggesting that specific receptor sites exist there. The activity of histamine, as related to stress response, at the base of the brain and, particularly, in the basal-olfactory regions, has been the subject of a number of scientific papers. Harris(11) has determined that levels of histamine at the basal regions of the brain are higher than elsewhere in the brain, and that injection of histamine into the third ventricle of the rabbit is followed by a stress response. He has postulated that the release of histamine in the region of the hypothalamus might be of importance in the stress response. Sawyer(12) demonstrated that the resultant stress response with the injection of histamine into the third ventricle is associated with high amplitude spindling on the electroencephalographic recordings from the septal region. The stress response was eliminated with a lesion in the septal region. Earlier studies from our laboratories demonstrated a relationship between activity of the septal region and stress, as measured by urinary 17-ketosteroids and eosinophile response, to electrical stimulation(13, 14). In another paper(15), we presented data showing that diamine oxidase levels were higher in these rostral, basal regions of the brain than in the cortex or in the brain stem. These studies have led us to speculate that the histamine and, as yet, incompletely identified enzymes for metabolizing this compound, might exist in high quantity in the septal region and that the interaction between them could be of considerable importance as the chemical substrate for the physiological activity of this key brain region with associated behavioral fluctuations.

SUMMARY

A cannula, and a method for its accurate implantation into predetermined brain regions, is described. This technique makes possible the accurate injection of minute quantities of chemicals into specific deep regions of the brain. The behavioral effects and concomitant changes in electrical recordings from subcortical structures induced by the injection of a variety of compounds and brain extracts into selected

brain regions of cats, monkeys, and humans are described. The most consistent and dramatic changes were induced with the injection of bovine septal extract, histamine, and atropine.

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DISCUSSION

MAX FINK, M.D. (Glen Oaks, L. I., N. Y.).—Dr. Heath and his co-workers once again present a series of provocative preliminary findings which indicate a willingness to undertake a most difficult and painstaking task and accomplish much in a short time. This report describes a technic for introducing 1/100 to 1/50 cc. solution into discrete brain areas, in animals and man. Certain observations are reported,

including greater behavioral responsivity occurring following injections in specified loci, notably the hippocampus and the septal regions; and the agents found most active in these areas have been atropine, histamine and septal extract. I should like to assess the historical significance of this study as well as raise some technical questions.

The major neurophysiologic studies of the past decade have demonstrated that by the use of depth electrodes, electrical activity not measurable in scalp or surface leads, can be recorded; and that the electrical activity occurs in the various tapped cerebral sites and not in others nearby. Electrical stimulation in various loci elicits different behavioral consequences for different sites and behaviors generally described as "positive or negative" or "rewarding or punishing" can be elicited from loci, only a few millimeters apart. These observations have been repeatedly made in man as well as animals, and represent the latest cartographic analyses of brain function.

Parallel with these neurophysiologic observations, considerable study has gone into the biochemical relations of brain function and behavior. With the renewed interest in psychotropic and hallucinogenic drugs, all clues indicate that alterations in brain function underlie the behavioral changes of these agents.

In the experiments reported here, these 2 streams of experimental neurophysiology are brought together. These preliminary findings are exciting because they show promise that a more physiologic stimulus to the nervous system is being studied. The studies of the behavioral and neurophysiologic interrelations of convulsive therapy and lobotomy, are essentially relationships of massive brain changes. The studies of psychotropic drugs, electrical stimulation, or electrocoagulation are less massive in their effects, but essentially "non-physiologic" in their character. The introduction of metabolites, ordinarily present in the nervous system, to localized areas, may give Dr. Heath and the other neurophysiologists in psychiatric and parkinson disease institute, a more delicate tool upon which to base the much needed neurophysiologic-behavioral correlative studies.

Among the interesting points in this report, I am most struck by the "apparent" differences in behavioral response for the agents tested when administered peripherally or centrally. Like Feldberg's and Sherwood's studies, these drug patterns are puzzling, and tend to suggest that homeostatic chemical balance mechanisms, so clearly demonstrated in various peripheral systems, are active in the brain as well.

This new technique may be helpful in eluci-

dating drug-neurophysiologic-behavioral relationships. But like all new technics, this one raises many questions which must be considered seriously. What is the relation of the osmotic pressure of various solutions, on the cells about the injected site? What is the diffusion rate, and how does volume of solution affect the results? Like some of the earlier studies of electrical stimulation, this technic has promise—but hopefully the technical details will be

worked out better than the parameters of electrical stimulation have been studied—for many of the results now ascribed to brain centers may equally be related to the electrical parameters of the stimulus and not the anatomic locus.

I should like to express my admiration for Dr. Heath's experimental enthusiasm and activity, and I look forward to the continuing biochemical-neurophysiologic relationships which are forthcoming from his laboratory.

SENSORY HABITUATION AND DISCRIMINATION IN THE HUMAN NEONATE¹

WAGNER H. BRIDGER, M.D.²

Our interest in studying the sensory capacity of human neonates stems from two frames of reference—neurophysiology and clinical observations. Both of these approaches are aspects of our main objective which has been a search for psychophysiological phenomena that will distinguish babies one from the other at birth. This search is based on the supposition that so-called basic temperamental differences may influence the reciprocal interaction between mother and infant and thus affect personality development. These differences may also help explain why certain environmental stresses produce severe personality deviations in some individuals, and not in others.

We decided to study sensory capacity because we feel that the techniques that we devised are closely related to clinical observations and also are related to recent important neurophysiological advances. In respect to clinical observations, Bergman and Escalona(1) described young children who were unusually sensitive to stimulation. These children appeared to react strongly but not necessarily negatively to very mild stimuli. They also reacted negatively to moderate stimuli and showed unusual sensory discriminatory capabilities and preoccupations. They also later developed childhood psychosis. Soviet psychologists(21) also describe extremely sensitive children but state that while some of these children become psychotic others develop into unusually gifted individuals.

However these were all clinical observations; sensory thresholds and discriminatory capacities were not experimentally determined. In approaching the problem of sensory capacity we decided to use a technique which would perhaps be related to some important neurophysiological processes. Ma-

goun(3) and Jasper(4) have emphasized the role of the ascending and descending non-specific reticular activating and inhibiting systems and the non-specific thalamic systems especially as related to arousal and attention. Differences in the functioning of these systems may affect the development of the child. Furthermore certain behavioral phenomena that are related to sensory capacity have been said to be mediated by these rather important neurophysiological systems. Larsson(5) has demonstrated electrophysiologically the relation between reticular arousal mechanisms and the startle response. Bartoshuk(6) has shown the connection of these arousal mechanisms and the phenomena of habituation, adaptation, or cessation of a startle response.

We therefore thought that if we studied the infant's ability to habituate his startle response to a sensory stimulus we would be measuring some aspects of his sensory capacity and also some aspects of the neurophysiological functions of his thalamic and reticular systems. There were 2 main questions confronting us: do new-born infants show the phenomena of habituation and do they have the capacity for sensory discrimination? In respect to the latter, all previous literature state rather unequivocally that babies do not show sensory discrimination in any modality.

The first part of our study then was to determine if babies can habituate or adapt their responses to a stimulus consecutively repeated. By habituation we mean decrement and cessation of response with repeated application of a constant stimulus.

The subjects for this study were 50 normal full-term babies from the new-born nursery at Bronx Municipal Hospital Center, ranging from 1 to 5 days old. They were taken to the adjoining laboratory at a set time between feedings. During the experimental session their heart rate was measured continuously with a direct writing, standard electrocardiograph utilizing 2 precordial leads. Violent activity did not in-

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terfere with heart rate measurements. The experimental procedure consisted of stimulating the infants with a repetitive series of pure tone auditory stimuli which had a constant loudness intensity. The interval between stimuli and the length of the stimulus was varied according to experimental design by means of an electrical timing mechanism and 3 observers made independent notations as to the presence and intensity of the behavioral response. The stimulus was produced by an audio-frequency oscillator with a graded volume control. In order to overcome the role of the state of the baby we used a stimulus intense enough to produce a response no matter whether the baby was deeply asleep or vigorously crying. However, some babies when crying or asleep did not respond to the most intense stimulus and we always had to vary the interval or novelty of the stimulus to determine whether the baby's cessation of responding was due to habituation and not a temporary shift in state of arousal. The same procedure was utilized in studying tactile stimulation. This tactile stimulus consisted of an air-stream directed at the abdomen or arm, whose force was just sufficient to produce an indentation of the skin. The heart rate reached during the first 5 seconds of stimulation was measured. This measurement has been shown by a previous experi-

ment(7) to be relatively independent of the pre-stimulus state. These heart rate measurements did not give us any additional information but confirmed our behavioral observations. When the baby startled, his heart rate went up to his individual startle heart rate level. When no behavioral response was observed the heart rate level remained relatively the same. Our results indicate that many babies have the ability to habituate their arousal response if the stimulus is applied with an interval of less than 5 seconds. This habituation goes through 2 phases. 1. The cessation of the marked startle. 2. The cessation of any response at all. All babies showed the first phase, while only some babies showed the 2nd phase. Among the variables of this habituation process we found that lengthening the duration of the stimulus and shortening the interval between stimuli decreased the number of repetitions necessary for habituation. This is illustrated in Figure 1. There were some babies who did not completely habituate even when the interval was $\frac{1}{2}$ second and the stimulus was repeated over 30 times. In an exploratory manner we found that by using a constant 20 second duration with a 3 second interval, we could distinguish babies one from the other by noting the number of trials necessary for the 2 phases of habituation. Our tentative

FIGURE 1
PARAMETERS OF SENSORY HABITUATION

Baby L43				Pure tone 400 cs.			
Duration 20 sec. Interval 10 sec.		Duration 5 sec. Interval 5 sec.		Duration 5 sec. Interval 3 sec.		Duration 20 sec. Interval 5 sec.	
1. ++++	16. +	1. ++++	16. +	1. ++	16. —	1. ++++	16. +
2. +++	17. +	2. +++	17. +	2. ++++	17. +	2. +++	17. +
3. ++++	18. +	3. ++++	18. +	3. ++++	18. —	3. ++	18. —
4. ++++	19. +	4. ++++	19. +	4. ++	19. +	4. ++	19. +
5. ++	20. ++	5. ++	20. —	5. +	20. —	5. ++++	20. +
6. ++	21. ++	6. ++++	21. —	6. —	21. —	6. +	21. +
7. +	22. +	7. ++++	22. +	7. +	22. —	7. +	22. +
8. ++++	23. —	8. ++	23. +	8. ++	23. —	8. +	23. +
9. +	24. +	9. —	24. +	9. +	24. —	9. —	24. —
10. +	25. +	10. +	25. +	10. +	25. —	10. ++	25. —
11. ++	26. —	11. +	26. +	11. —	26. —	11. +	26. —
12. ++	27. +	12. —	27. +	12. +	27. +	12. +	27. —
13. ++	28. +	13. +	28. —	13. ++	28. —	13. +	28. —
14. +	29. +	14. +	29. +	14. +	29. —	14. +	29. —
15. —	30. +	15. —	30. +	15. +	30. —	15. +	30. —

The ratings of behavioral responses of an individual baby to a series of constant pure tone auditory stimulations. The ratings are pooled from three independent observers and were as follows: +++ = full startle, ++ = modified startle, + = any behavioral evidence that the baby heard the stimulus, — = no behavioral change with stimulation. The duration is the length of time the stimulus is on, or being applied, and the interval is the length of time between stimulations.

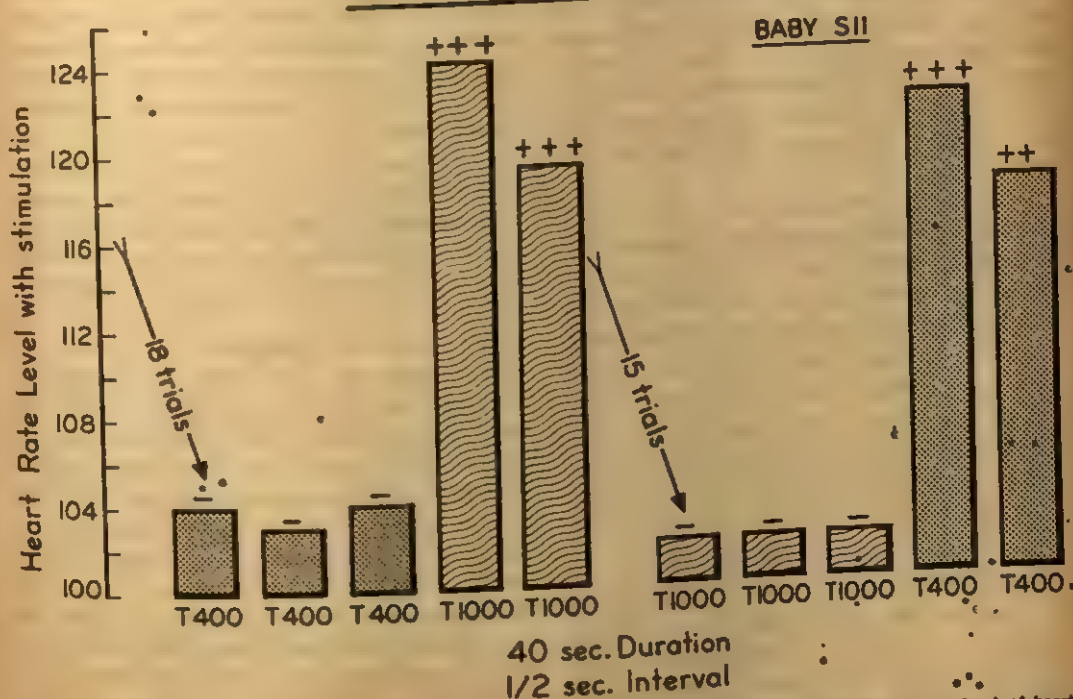
empirical classifications include 4 groups : babies who respond to *most* of the stimuli and either habituate quickly or not at all ; and babies that respond to *few* of the stimuli and either habituate quickly or not at all. We are in the process of testing the day to day constancy of these measurements.

While conducting these habituation studies we conceived the idea of using this technique to determine whether babies can discriminate pitch or auditory frequency. Our method was to habituate the babies' response to a pure tone, and when the baby was no longer giving any responses to this tone, we substituted a different pure tone and noted the behavioral and heart rate response. Since the degree to which loudness depends on frequency decreases as the level of intensity rises, we used an intense tone and also controlled for the loudness contour. In order to get good habituation we extended the duration of the tone to 40 seconds and decreased the interval to $\frac{1}{2}$ second. Figure 2 illustrates our results. Af-

ter the baby showed no behavioral or heart rate response to 3 consecutive applications of tone 400 c/s, in the next $\frac{1}{3}$ second interval we switched to tone 1000 c/s, and the babies usually startled and showed an accompanying increase in heart rate. We then habituated the response to tone 1000 c/s, and switched back to tone 400 c/s, and the babies startled again. We were able to demonstrate pitch discrimination in 15 babies but not in others, and the limits of this discrimination varied. One baby could discriminate between tones of 200 c/s and 250 c/s. Of course if the baby did not habituate we could not test discrimination. We applied this technique to tactile stimulation in a few babies and found that if an air puff is applied for 5 seconds to the right hand with intervals less than 3 seconds the baby habituates his responses, and when it is then applied to the left hand, the response returns and vice versa ; the same holds true for the right and left sides of the abdomen.

It is thus rather evident that human neo-

FIGURE 2
SENSORY DISCRIMINATION



Pitch or auditory frequency discrimination in a two day old infant. The heart rate response is indicated by the level of heart rate reached during the first 5 seconds of stimulation. The behavioral responses shown above the bars, are rated as in Figure 1. The trials indicate the number of consecutive stimulus applications necessary for complete habituation. Three additional trials were given after habituation occurred and before the switch to the novel stimulus.

nates show the phenomena of sensory habituation and sensory discrimination. Perhaps measurements of these phenomena when applied as a technique to distinguish babies one from the other may point up differences in basic sensory capacities and differences in the neural mechanisms subserving general excitation, inhibition and attention processes.

What are implications of the existence of habituation and discrimination in the neonate in regard to neocortical functioning in the neonate? Recent Soviet experiments by Dr. Eugene Sokolov(8) indicate a similar phenomenon in human adults with a crucial difference. He describes habituation to auditory stimuli but also states that when the interval between stimuli is decreased or the intensity of the stimulus is decreased the response occurs again. He ascribes this function to the existence in the neocortex of a neuronal model of the stimulus. Our babies did not lose their habituation to a given stimulus if the stimulus was decreased in intensity or applied after a shorter interval. The response only returned if the interval between stimuli was lengthened, not shortened. Adult habituation is apparently of a different order and the neonate's habituation is not necessarily dependent on the neocortex. Sokolov also describes some experiments with 1-day-old infants in which, with a change in the spatial localization of the source of the sound, the response returns again.

Specifically relevant to our own studies are Sharpless and Jasper's(4) neurophysiological experiments on the habituation of the arousal reaction in cats. They found that there are 2 types of arousal reactions—one very susceptible to habituation, the other more resistant to habituation. The type that is resistant to habituation was said to be related to non-specific thalamic mechanisms subserving attention processes, while the type susceptible to habituation is related to the lower reticular activating system. In our own study we also found 2 types of arousal responses with different rates of habituation. Individual differences in these mechanisms may be important indices of temperamental properties. Sharpless and Jasper also demonstrated that decorticate

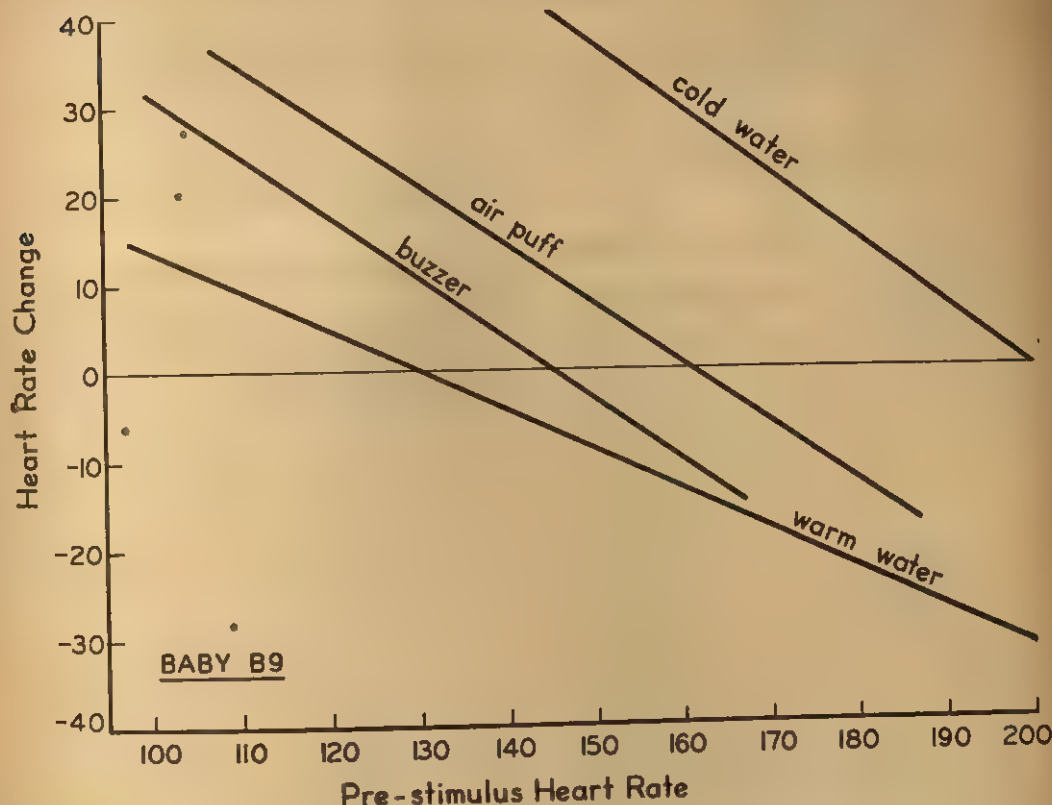
cats show habituation and pitch discrimination.

Thus we feel that the pitch discrimination demonstrated in our experiments does not depend on the functioning of neocortical structures. This primitive type of sensory discrimination is of a different order from that shown by mature organisms which is really discrimination by learned differentiation. The usual method of studying sensory discrimination in non-verbal subjects involves the use of conditioned reflex techniques. The subject is conditioned to one stimulus and automatically generalizes the conditioned response to all similar stimuli. Only the original stimulus is reinforced and the other stimuli undergo conditioned inhibition. The subject learns to differentiate the stimulus that is reinforced, from all others, and this discriminatory capacity is determined by the extent of the conditioned inhibition. Since conditioned inhibition is poorly developed in infants(2) they have a low capacity for learned sensory discrimination, even though our habituation experiments demonstrated some sort of primitive sensory discrimination.

Both Hernández-Péon(9) and Galambos(10) performed neurophysiological experiments and concluded that the inhibitory mechanism responsible for sensory habituation is located in the mid-brain reticular system. Precht(11) in his study of the central adaptation of the head turning responses in babies also located the process in the reticular system. This sort of primitive discrimination has been reported for premature babies by Dr. John Benjamin(12).

In respect to the problem of measuring sensory capacity, a few comments may be pertinent. In an earlier study(7) we correlated babies' heart rate responses with their pre-stimulus heart rate and found that babies differed from each other in the slope of the regression lines. We thought that these differences in the functioning of the "law of initial value" may reflect differences in homeostatic efficiency. While this may be true we also feel that these differences may indicate differences in sensory thresholds and capacity. We found that when a weak stimulus is used, the slope of the regression line becomes flatter and the scatter is great.

FIGURE 3



Best fitting regression lines of patterns of heart rate responses produced with stimulation of different modalities in an individual baby.

er—the “law of initial value” is not so valid. Perhaps for a given intensity of stimulation, babies whose heart rate responses are erratic have a higher threshold than babies whose heart rate responses conform rather rigidly to the “law of initial values.” In support of this idea is the observation by Freedman(13) that premature babies don’t conform to the “law of initial values,” and Graham(14) has shown that brain damaged infants have a higher pain threshold than normals.

As to the problem of comparing different sensory modalities Figure 3 illustrates a technique which may be useful. We apply an inhibitory stimulus (warm water) and get a low stimulus heart rate, then cold water and get a high stimulus heart rate, and then apply the test stimulus—tactile or auditory *etc.* and calculate how much of the range was used up with this stimulation. We can thus compare babies in respect to

their differential sensitivities in the various sensory modalities.

SUMMARY

In summary, in the process of exploring the neonates’ behavioral and autonomic repertoire for the purpose of devising techniques that would enable us to measure temperamental differences, we have come across two phenomena that we would like to emphasize. First we described the neonate’s ability to habituate his responses to sensory stimuli and pointed out its possible relations to the neurophysiological structure subserving arousal, inhibition and attention; second we demonstrated that neonates have the capacity for sensory discrimination but noted that this primitive discrimination and habituation need not be dependent on the functioning of cerebral cortex and does not appear to be identical with the same phenomena in the mature organism.

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COMBINED DRUG THERAPY OF CHRONIC SCHIZOPHRENICS¹

Controlled Evaluation of Placebo, Dextro-Amphetamine, Imipramine, Isocarboxazid and Trifluoperazine Added to Maintenance Doses of Chlorpromazine

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JULIAN J. LASKY, Ph.D.,⁴ AND EUGENE M. CAFFEY, JR., M.D.⁵

The proportion of psychotic patients released during their first two years of hospitalization has varied considerably over the past 30 or 40 years, but the release rate of those who have been hospitalized more than two years has remained steady(1). This trend has increased the proportion of chronic schizophrenic patients in mental hospitals, creating an especially important therapeutic problem in Veterans Administration Neuropsychiatric Hospitals, most of whose patients first became ill during or soon after service in the first and second world wars. Treatment of such chronic schizophrenics has been attempted with combinations of sedatives or tranquilizers with stimulants or antidepressants(2-18). Most investigators concluded that combinations increased therapeutic effectiveness although a few, well-controlled studies failed to support this contention(19-21).

Many chronic schizophrenic patients in VA hospitals were known to be on maintenance treatment with phenothiazine derivatives. A large-scale cooperative study was designed to explore the possible enhancement of conventional treatment by the addition of the new antidepressant drugs. Five hundred and twenty patients currently being treated with chlorpromazine (Thorazine) were obtained from 26 hospitals for 20 weeks of combination treatment.⁶ Drugs

added were dextro-amphetamine, imipramine, isocarboxazid, trifluoperazine and placebo.⁷ This report presents the over-all plan of the study, clinical results and major side effects. Other aspects of the study, for example, patient-staff attitudes related to treatment response, and a comprehensive report of side effects and laboratory data will be published separately(22).

PROCEDURE⁸

Each hospital prepared a list of 40 apathetic, withdrawn, but physically healthy schizophrenic men. All patients had been treated with 200-600 mg. of chlorpromazine daily for two or more months without current improvement. Patients with a lobotomy, neurologic disease or seizures, toxic psychosis or prior treatment with the study drugs were excluded from the sample. Twenty eligible patients from each hospital were then randomly selected and assigned to the various drug combinations by the Central NP Research Laboratory at Perry Point, Md. A double-blind procedure was employed in drug administration.

this study: American Lake, Washington, Battle Creek, Mich., Biloxi, Miss., Brockton, Mass., Coatesville, Pa., Danville, Ill., Downey, Ill., Jefferson Barracks, Mo., Lebanon, Pa., Lexington, Ky., Los Angeles, Calif., Lyons, N. J., Montrose, N. Y., Murfreesboro, Tenn., Northampton, Mass., North Little Rock, Ark., Northport, L. I., N. Y., Palo Alto, Calif., Perry Point, Md., Roseburg, Ore., Salisbury, N. C., Salt Lake City, Utah, St. Cloud, Minn., Togus, Me., Topeka, Kan., Tuskegee, Ala., and Waco, Texas.

⁷ Geigy Pharmaceuticals (placebo-mannitol, imipramine-Tofranil), Hoffman-La Roche, Inc. (isocarboxazid-Marplan), and Smith Kline and French Laboratories (dextro-amphetamine-Dexedrine, Trifluoperazine-Stelazine) generously donated these drugs.

⁸ The complete study protocol, reproduced in the Transactions of the Fourth Annual Research Conference on Chemotherapy in Psychiatry(23), contains considerable detail regarding selection of patients, measures, dosage schedules, laboratory controls, and precautions.

¹ Project four of the Veterans Administration Cooperative Studies of Chemotherapy in Psychiatry. The following individuals contributed to the study: Jesse L. Bennett, M.D., Donald R. Gorham, Ph.D., Clyde J. Lindley, M.A., Maurice Lorr, Ph.D., Amedeo S. Marrazzi, M.D., John E. Overall, Ph.D., Alex D. Pokorny, M.D., and Marcus P. Rosenblum, M.D.

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⁴ VA Central NP Research Laboratory, Perry Point, Md.

⁵ VA Hospital, Perry Point, Md.

⁶ The following VA-NP hospitals participated in

The sample of 520 patients ranged from 21 to 55 years in age, the mean being 38 years. The average patient had been hospitalized 8½ years during his current stay. This was the first hospitalization for 21%; the second or third for another 57%. Only one patient in 5 had left the hospital for more than a week's planned absence during the year preceding the study. Nearly 78% had never been married; less than 8% were currently married. The average patient had completed 9½ grades of school. Fifty-four per cent had worked only at unskilled jobs and another 17% had never held a steady job.

Symptomatic response to the study drugs was evaluated by two measures: The Inpatient Multidimensional Psychiatric Scale or IMPS(24) and the Psychotic Reaction Profile or PRP(25). In terms of their pre-study measures these patients demonstrated more withdrawal, disorientation, conceptual disorganization and motor disturbance than the average VA patient but less grandiose excitement, agitated depression, paranoid projection, hostile belligerency, perceptual distortion and excitement. Withdrawal includes such behavior as retarded speech and movement, apathy and lack of relationship with others. Disorientation to time or place was present to some degree in about 45% of the sample. Patients with high scores on motor disturbance grin and grimace inappropriately, while conceptual disorganization scores reflect irrelevant, repetitive, rambling or incoherent speech including neologisms. The sample was reasonably typical of a group of withdrawn, chronically ill schizophrenics, not particularly active or disturbed and showing little affect, either in the form of depression or elation.

During the study, each patient remained on his individually established dose of chlorpromazine. Coded medication in identical appearing capsules was supplied to the hospitals in the following strengths: dextroamphetamine, 10 mg.; isocarboxazid and trifluoperazine, 5 mg.; imipramine, 37.5 mg. and placebo. During the first 4 weeks, a predetermined dosage schedule was followed: days 1-3, one capsule; days 4-7, two capsules; days 8-14, three capsules and days 15-28, four capsules. During the final 16 weeks, medication was prescribed within

the limits of 1 to 6 capsules daily. "Activator" medication was not dispensed during the late afternoon. Results indicated that dosage was used through the full range with 60% of all patients being on maximum dosage during the last few weeks of the study.

Pairs of raters independently evaluated all patients immediately before the study and after 4 and 20 weeks of combined drug treatment. Psychiatrists and psychologists interviewed the patients and completed the IMPS; nurses and nursing assistants completed the PRP on the basis of recent ward observations. Data relating to clinically observable side effects, blood pressure and hematologic changes, and hepatic function were obtained at regular intervals.

Fifty-eight patients were not included in the final analysis of data: 27 were dropped for medical reasons and 31 were excluded for administrative reasons, usually incomplete data.

The statistical method for evaluating therapeutic effectiveness of the drug combinations was analysis of multiple covariance (simple randomized design). Each of 17 symptom clusters, 10 from the IMPS and 7 from the PRP, was analyzed for relative change over the first 4 weeks, the following 16 weeks, and for the entire 20 weeks. Final mean scores in each analysis were adjusted for pre-study status on the variable being analyzed as well as for the net effect of 11 prognostic or control variables: age, length of current hospitalization, number of prior hospital admissions, current marital status, anticipated community placement if discharged, number of times on trial visit or leave of absence during the year preceding the study, education, work level, use of alcohol as a contributing factor in the present hospitalization, chlorpromazine dosage and initial body weight. This adjustment served to equate the groups prior to study and to increase the sensitivity of the tests of mean differences. The findings, based on 510 comparisons (10 for each of 17 criteria over 3 time periods) were also subjected to a multiple range test for further protection against chance effects(26). The 5% level of statistical significance was applied throughout.

RESULTS

Clinical Ratings^a

Changes after 4 weeks of combined drug treatment were not impressive. Significant differences between treatments were observed on 4 IMPS measures (paranoid projection, agitated depression, motor disturbance and conceptual disorganization) but on none of the PRP measures. Of these four, only conceptual disorganization was significant by the end of the study.

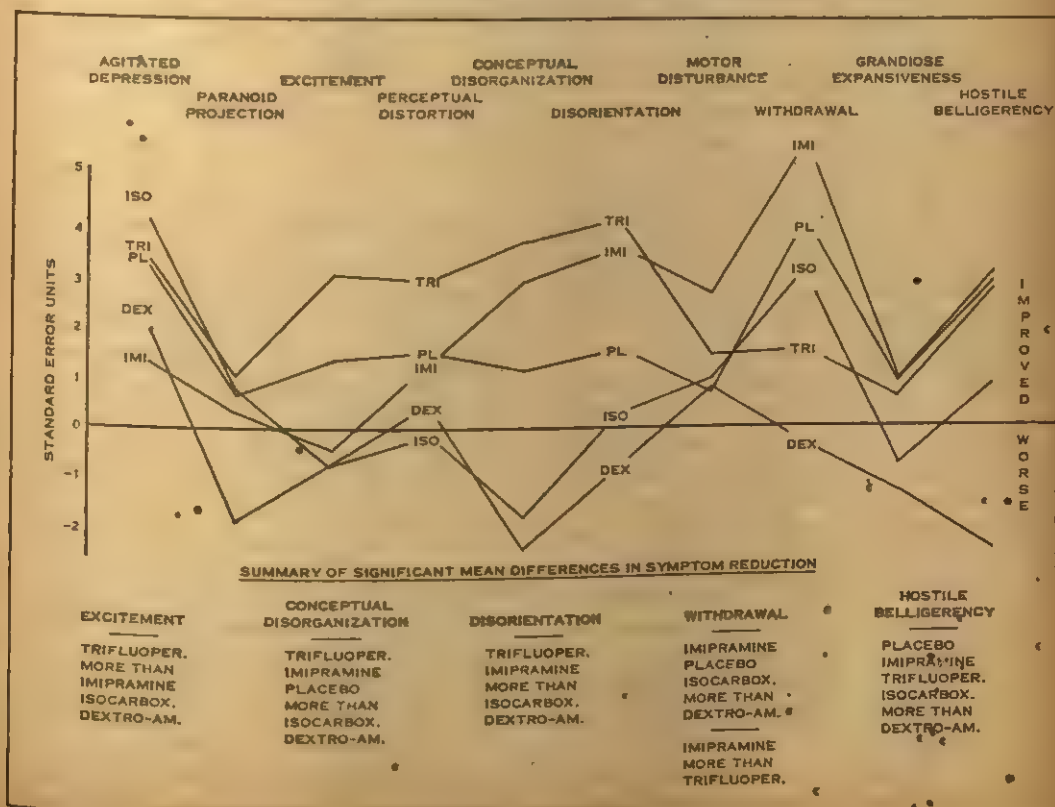
Symptom reductions indicated by the

^a Detailed statistical tables containing the adjusted means, F ratios, and results of the multiple range test for all criteria at the three evaluation periods may be found as a statistical supplement in the Appendix of the Transactions of the Fifth Annual Research Conference on Chemotherapy in Psychiatry (23). Inquiries concerning additional statistical or procedural details may be directed to the Central NP Research Laboratory, Perry Point, Md.

IMPS after 20 weeks of treatment are summarized in Figure 1. Significant differences between the various drug combinations were noted on 5 of the 10 scale measures. *No combination of drugs was more effective than chlorpromazine with placebo.* The best combination for controlling excitement was trifluoperazine. Trifluoperazine and imipramine combinations were each superior to the other two in reducing disorientation and conceptual disorganization but neither was superior to the other. Withdrawal, one of the target symptoms, was more effectively treated by imipramine and isocarboxid combinations than by added dextro-amphetamine; imipramine combination also surpassed the trifluoperazine combination. The dextro-amphetamine combination aggravated hostile belligerency; all other combinations were superior in reducing this symptom cluster.

FIGURE 1

CHANGES IN SYMPTOMS AFTER 20 WEEKS OF COMBINED DRUG THERAPY
INTERVIEW TEAM RATING (IMPS)



Changes on the PRP after 20 weeks of treatment are presented in Figure 2. Significant differences between treatment groups were noted on 6 of the 7 measures. As on the IMPS, one or more of the added drugs was superior to the dextro-amphetamine combination but none was superior to chlorpromazine-placebo. The IMPS and PRP reflected similar withdrawal and conceptual or thinking disorganization changes. On the PRP, however, agitated depression was affected differently by the various combinations, imipramine and placebo appearing better than the others.

Besides comparing treatment groups with each other, data were analyzed to compare changes *within* each treatment group over the 20-week period. Significant changes in each treatment group are shown in Table 1. Addition of placebo to chlorpromazine produced significant improvement in 8 of 17 criterion measures as contrasted with 9 of

17 improved by adding trifluoperazine. On the other hand, significant worsening on 3 measures followed addition of dextro-amphetamine. Specific drug effects on symptoms were difficult to distinguish, though trifluoperazine appeared to improve further such psychotic symptoms as disorientation, conceptual disorganization, perceptual distortion, and thinking disorganization. Perhaps equivalent augmentation of the dose of chlorpromazine would have done the same.

Two major conclusions may be drawn regarding 20 weeks of combined drug therapies. First, none of the combinations of chlorpromazine and an activating drug was superior to chlorpromazine alone (with placebo). Second, addition of dextro-amphetamine to maintenance therapy with chlorpromazine not only may impair continued improvement but may actually make patients worse. Of the three newer

FIGURE 2
CHANGES IN SYMPTOMS AFTER 20 WEEKS OF COMBINED DRUG THERAPY
WARD TEAM RATING (PRP)

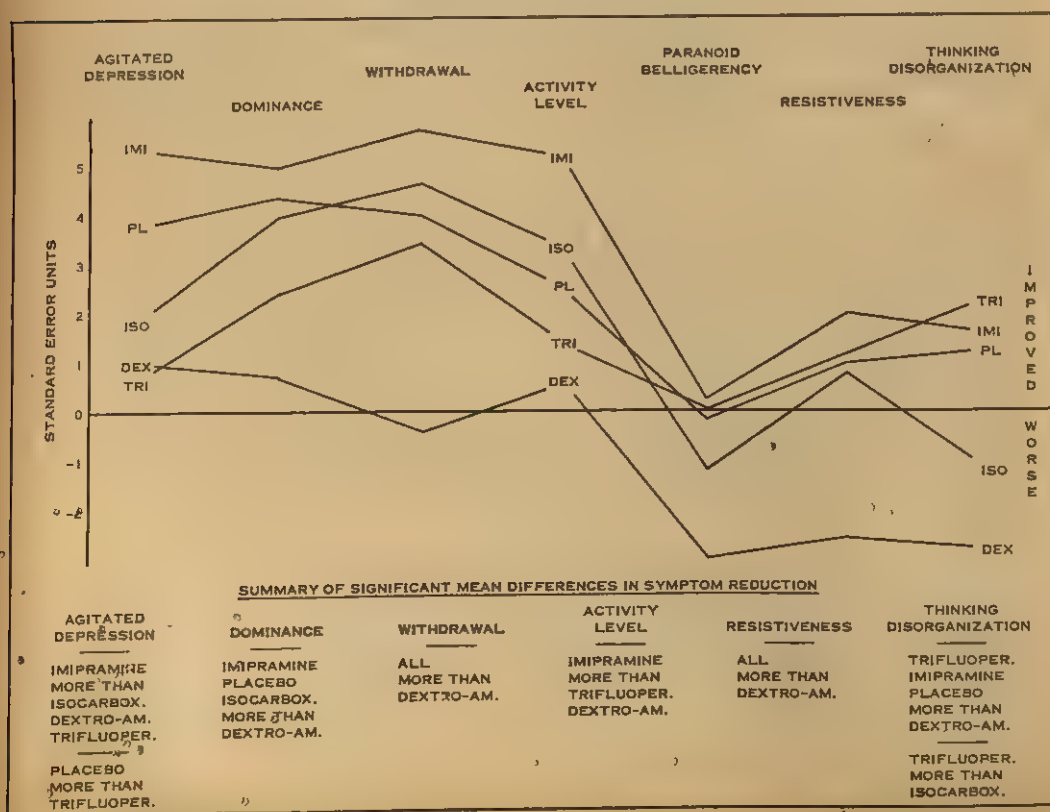


TABLE 1
CHANGES IN SYMPTOM RATINGS AFTER 20
WEEKS OF COMBINED DRUG THERAPY *

Symptom Clusters	Drugs added to chlorpromazine				
	Pl.	Tri.	Imi.	Iso.	Dex.
IMPS					
Withdrawal	+		+	+	
Agitated depression	+	+		+	
Hostile beligerency	+	+	+		-
Conceptual disorganization		+	+	-	
Disorientation		+	+		
Excitement	+	+			
Perceptual distortion		+			
Motor disturbance			+		
PRP					
Withdrawal	+	+	+	+	
Agitated depression	+		+		
Paranoid beligerency					-
Thinking disturbance		+			-
Dominance	+	+	+	+	
Activity level	+		+		

* Statistically significant improvement (+) or worsening (-).

compounds, adding imipramine or trifluoperazine appeared to be superior to adding isocarboxazid.

SIDE EFFECTS AND LABORATORY FINDINGS

Complications of treatment were infrequent, seldom necessitating removal of patients from the study. Side effects were often observed prior to addition of the test drugs, further decreasing their significance during the study. Twenty-seven patients were terminated early because of medical complications not necessarily related to drug therapy. Five patients were dropped because of intercurrent illness, 3 for gastrointestinal bleeding and 7 because their psychiatric condition worsened. Three of 4 patients dropped for neurological effects were receiving trifluoperazine. Three patients, all getting dextro-amphetamine, were dropped because of weight loss. Hypotension accounted for one dropout, tachycardia for 2 others. One patient receiving trifluoperazine was terminated in the 14th

week because of the development of leukopenia. Another patient was terminated because of distinctly elevated SGO-T titers but his prestudy SGO-T titer was so abnormal that this complication could hardly be ascribed to his study medication. There were no instances of jaundice or agranulocytosis. Dropouts for specific reasons were not differentially related to type of medication although the greatest number over-all were from the dextro-amphetamine group.

No side effects before or during treatment were reported for 255 of the 462 patients. The incidence of specific side effects was also low. The most common one, cardiovascular disturbance, was reported for only 36 patients. Differences among treatment groups were significant for two specific side effects only: of the 17 patients who developed extrapyramidal symptoms during treatment, 9 were in the trifluoperazine group; 10 of the 17 patients reported as demonstrating loss of appetite were receiving dextro-amphetamine. There was no relationship between dosage level of chlorpromazine and the incidence of side effects and abnormal laboratory findings.

Deviant laboratory findings were evenly spread among the treatment groups. At one time or another, 55 patients had eosinophilia (eosinophil count > 6%), 74 had leukocytosis (total leukocyte count > 13,500 cu. ml.) and 17 were leukopenic (total leukocyte count times per cent neutrophils < 1,800). Hepatic tests, predominantly the serum glutamic oxalacetic acid transaminase test, were abnormal for 91 patients (SGO-T > 40 units). However, each of these deviations is inflated as many patients had only isolated abnormalities while others also had them prior to study.

Weight changes over the 5 months of study were sufficient to be considered a complication. By the end of the study all groups showed significant changes in weight. The dextro-amphetamine group lost 4.5 pounds on the average while all the other groups gained weight; 12.5 pounds in the imipramine group, 9.5 pounds for isocarboxazid and approximately 4 pounds for trifluoperazine and chlorpromazine alone. In the case of imipramine and isocarboxazid, weight gains were significantly higher than from adding trifluoperazine or

placebo. In some instances, this side effect was clearly undesirable. The extremes of individual weight changes ranged from a loss of 52 pounds to a gain of 84 pounds.

DISCUSSION

The average patient in this study was a 38-year-old, modestly educated, vocationally unskilled bachelor. His social and economic adjustment prior to hospitalization was poor, being worsened by almost a decade of current hospitalization. During this period, he was refractory to treatment, including drug therapy. Although seriously ill from a social viewpoint, he no longer manifested the flagrant psychotic symptoms that might have been present earlier in his illness. The number of such patients is large enough in all psychiatric hospitals to more than justify the continued search for a means of stimulating further improvement.

In the light of the clinical problem posed, a controlled study seemed indicated. Dramatic improvement was neither expected nor did it occur. After 5 months of treatment, there was a statistically significant reduction in symptom ratings in all but the dextro-amphetamine group. Positive changes, although statistically reliable, were not clinically impressive; no patient improved sufficiently to be discharged or to be granted a trial visit. Current drug therapies, however effective for acutely ill schizophrenics, cannot be expected to change what has become a way of life for these chronic patients or to supply the social, economic and personality resources which they lack.

One reason for the relatively poor result of the drug combinations was the improvement patients made after merely adding placebo to their maintenance chlorpromazine. This might reflect the continuation of a gradual long-term trend toward improvement or the effect of 5 months of additional therapy with chlorpromazine. However, patients were selected because of clinical stability and most had been receiving chlorpromazine for well over two months. Rater bias toward improvement might account for the improvement but this seems unlikely as raters detected the worsening of the dextro-amphetamine group. The most likely speculation is that patients

responded positively to increased staff attention, though such a placebo effect was not observed in two similar studies (27, 28).

Attempts to single out selective drug actions proved futile as the added drugs were no better in reducing symptoms than chlorpromazine alone. Trifluoperazine added to chlorpromazine appeared to enhance antipsychotic effects (reduced disorientation, conceptual disorganization, perceptual distortion, thinking disorganization and excitement) over some other combinations, while imipramine exceeded trifluoperazine in controlling agitated depression, withdrawal and inactivity.

While these particular drug combinations were not especially effective, they were safe. Only 5% of the patients were dropped from the study because of side effects or complications, not all of which were clearly related to treatment. As in earlier VA cooperative drug studies, abnormal symptoms, signs and laboratory tests were usually distributed evenly among the treatment groups (29). Two clear cut exceptions were the increased prevalence of extrapyramidal syndromes following addition of trifluoperazine and loss of appetite from adding dextro-amphetamine. With the exception of dextro-amphetamine all other drug combinations were accompanied by some weight gain.

We should like to emphasize that our findings regarding drug combinations apply only to the manner we used them; that is, by adding activator drugs to maintenance treatment with chlorpromazine. Combined drug therapy has also been used by starting both classes of drugs concurrently or treating first with a stimulant (possible exacerbating the psychosis) and then following with chlorpromazine (19). We rejected these approaches largely on the basis of practicability and possible hazards, but the results of this study do not apply to these alternate methods.

SUMMARY

Five hundred and twenty chronic, withdrawn and apathetic schizophrenic men were selected for 20 weeks of treatment with combined drug therapy. All had been on maintenance doses of chlorpromazine (200-600 mg.) for 2 or more months. Activator drugs were added to chlorpromazine and

libidum in the following maximum daily dosage (or less) : dextro-amphetamine, 60 mg.; isocarboxazid and trifluoperazine, 30 mg.; imipramine, 225 mg.; and placebo.

Prior to the study and after 4 and 20 weeks of treatment, 462 patients were rated on 17 measures from an interview scale (IMPS) and a ward scale (PRP). Changes after 4 weeks of combined drugs were not impressive. At the end of 20 weeks, every treatment group except dextro-amphetamine improved, including the chlorpromazine-placebo group. None of the drug combinations was superior to chlorpromazine and placebo. Adding dextro-amphetamine increased hostile and paranoid belligerency and thinking disturbance.

Only 5% of the patients were dropped from the study because of side effects or complications. Abnormal laboratory tests were also infrequent and evenly distributed among the treatment groups. Trifluoperazine added to chlorpromazine increased the prevalence of extra-pyramidal syndromes, while dextro-amphetamine produced appetite and weight loss. All other treatment groups gained weight, significantly more from adding imipramine and isocarboxazid than from adding trifluoperazine or placebo.

Although the present study did not demonstrate substantial benefit from combined drug therapy, the chronicity of the patients and the method of drug administration limit generalization.

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BEHAVIORAL CHANGES IN PATIENTS WITH STROKES^{1, 2}

MONTAGUE ULLMAN, M.D., AND ARNO GRUEN, Ph.D.³

Two broad points of view embodied in the work of Kurt Goldstein(1) and the more recent studies of Weinstein and Kahn (2) have evolved concerning the nature and origin of behavioral disturbances in brain-damaged patients. Although in many ways the views on denial expressed by Weinstein and his associates are an outgrowth of the earlier work, there are also certain significant differences.

Goldstein emphasizes the incapacity of these patients to function at an abstract level. He describes a particular deficit, namely, the inability to make choices or to deal in the realm of the possible. His interpretation of a great many of the manifestations of these patients is in line with the concept that they seek to limit their environmental contact to areas of adequate stimulation. He speaks of avoidance as a biologically induced process designed to minimize or to eliminate the occurrence of a catastrophic reaction.

The emphasis of Weinstein and Kahn appears to be more on the motivated aspect of the patient's responses, as these are manifested in the patient's effort to express himself and his values through altered patterns of symbolic organization. The experiential content becomes meaningful when viewed through the social and cultural screen of the patient's idiosyncratic life experiences. The response is then a function of whatever the characteristic defensive style of the patient may be, with the level of alteration in the brain milieu influencing the manner in which this style is symbolically expressed.

We have had the opportunity in the course of a 3-year period (1957-1960) to

make a number of observations on patients admitted to a general hospital during the acute phase of a cerebro-vascular accident. It is our purpose to present some of our findings and to discuss them in the light of the above-mentioned points of view.

A total of 390 patients have been seen to date. We have selected for consideration 84 patients. This group represents those who experienced a hemiparesis or hemiplegia and where adequate psychiatric data were available. Eliminated from this report are 48 patients with severe aphasic disturbances, 74 who had strokes but no motor deficit, 94 who died soon after admission either of the effects of the stroke or complicating illness, and 90 where the data were inadequate because of language barriers or limited hospital stay.

The 84 patients were classified according to whether the psychological deficit on clinical estimate appeared to be mild, moderate or severe. Patients were rated as mild who showed no gross impairment in the interview situation when questioned about their illness and past history. Those rated as severe showed global defects in general orientation and responsiveness. Those rated as moderate represented an intermediate group with uneven performance and fluctuating levels of response.

FINDINGS

The age distribution, neurologic and electroencephalographic findings, and the disposition of the patients in each of these categories are given in Tables 1, 2, and 3 respectively.

Age: Distribution of age appears similar for the moderate and severe groups (Moderate: average 66.8 years, range 50 to 80; Severe: average 65.1 years, range 40 to 81). Though the distribution of age categories of the mild groups overlaps with those of the moderate and severe groups, 13% of its population comes from the 30-39 year age bracket. Since the latter contributes nothing to the moderate and severe groups, it alone accounts for the lowered

¹ Read at the 116th annual meeting of The American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

² This study is part of a long-term investigation of Cerebral Vascular Disease supported by The National Institute of Neurological Diseases and Blindness: U. S. Public Health Grant No. 3-B-9009.

³ From the Second (Cornell) Medical and Neurological Service, Bellevue Hospital, New York City.

TABLE 1
Age Distribution of 84 Stroke Patients

AGE RANGE.	MILD DEFICIT GROUP	MODERATE DEFICIT GROUP	SEVERE DEFICIT GROUP	TOTAL
30-39	7	—	—	7
40-49	3	—	1	4
50-59	13	6	1	20
60-69	21	5	6	32
70-79	7	9	2	18
80-89	1	1	1	3
Average :	58.0	66.8	65.1	
Range :	33-82	50-80	40-81	

TABLE 2
Neurological Findings For The Three Deficit Groups

	MILD (N=52)			MODERATE (N=21)			SEVERE (N=11)		
	N	% (Approximate)		N	% (Approximate)		N	% (Approximate)	
Sensory Loss									
None	30	58	}	4	19	}	1	9	}
Mild	12	23		2	9		1	9	
Moderate	4	8	}	3	14	}	3	27	}
Severe	3	6		9	42		3	27	
Equivocal	3	6		3	14		3	27	
Hemiparesis									
Mild	21	40		6	28		2	18	
Moderate	15	29		7	33		4	36	
Severe	16	31		8	38		5	45	
Hemianopia	4	7		10	47		6	54	
Equivocal	0	0		4	19		4	35	
Dominant Side	27	52		2	9		5	45	
Aphasia	9	16		6	28		4	36	
EEG									
Normal	16	31		0	0		0	0	
Intermediate	22	42		7	33		5	45	
Grossly & Diffusely									
Abnormal	4	8		12	57		5	45	
No Record	10	19		2	9		1	9	

TABLE 3
Disposition of Patients in All Groups (84)

GROUP	MILD	MODERATE	SEVERE	TOTAL
Home	35	7	3	45
Care of Relatives	9	1	0	10
Nursing Homes	7	8	1	16
Psychiatric Hospital	0	1	4	5
Died	1	4	3	8
TOTALS	52	21	11	84

average age of the mild group (average : 58 years, range 33 to 82).

Neurologic and Electroencephalographic Findings : As compared with the moderate and severe groups, the motor loss in the mild group tended to be less severe, as did the sensory changes and the EEG findings. There were also fewer associated field defects. The moderate and severe groups cannot be reliably differentiated for comparative degree of brain damage on the basis of these variables.

Disposition : Although many factors other than level of brain damage enter into the disposition, the latter undoubtedly plays an important part. The groupings can be most clearly differentiated on the basis of this factor. Of the 52 patients in the mild group, 35 went home, 9 were cared for by relatives, 7 went to nursing homes, and 1 died while in hospital. This death was attributable to myocardial infarction several months after admission. The trend in the moderate and severe groups was toward higher incidence of nursing home care, psychiatric hospitalization, and death. The deaths in the moderate and severe groups were directly related to the stroke. Psychiatric hospitalization in each instance was on the basis of organic dementia.

MILD DEFICIT GROUP (52 PATIENTS)

In these patients the stroke was experienced without any striking alteration in the general level of consciousness. In connection with the onset of a stroke there appears to be no direct awareness of any cerebral disturbance *per se*. Awareness of illness occurs as an indirect effect following upon the actual experience of sensory and motor dysfunction.

These patients were specifically questioned concerning their subjective experiences during the initial stages of the illness. Two general categories of response were noted :

In 30 patients there was immediate awareness of disordered function and rapidly thereafter insight into the nature of the illness and its possible implications.

Example 1 : When I got dressed I knew something was funny—I could not get my hand in my sleeve. As I got out of the cab I

fell and acted as though drunk. I noticed my speech was wrong. I knew I had a stroke. I was frightened.

In the remaining 22 patients awareness gradually occurred through repeated perceptual experience relating to manifest motor difficulty or on the basis of the patient's observations of the reactions of others to him. Eventual integration of the experience occurred.

Example 2 : I woke up in the morning—I tried to get out of bed. All of a sudden I was half paralyzed. I managed to walk downstairs. I wanted to cross the street and get something to eat. I could not think of anything. I thought perhaps it was a cold settling on my spine. When I talked to people they looked at me in astonishment. There was something wrong with my speech.

Example 3 : I was home—in the toilet—I came out and I fell—could not get up. I used my strength and went to bed. I walked (about 20 blocks) to the hospital. I know I was weak—could not stand up good—I heard about strokes—but did not believe I had one.

In the mild deficit group taken as a whole, the reaction to the illness occurs in terms of characteristic personality patterns and without obvious alterations stemming from the brain damage *per se*. In the examples given, idiosyncratic attitudes toward serious illness, physical handicap and possible death can be noted. These include feelings of helplessness and anxiety (Example 1), minimizing the event (Example 2), and denial (Example 3). Only 2 severe reactive states were noted in this group, both in the form of depression.

MODERATE DEFICIT GROUP (21 PATIENTS)

These patients showed an unevenness of performance during interview. A characteristic feature was various denial patterns in an interpersonal context in matters pertaining to the illness. Along with this was the relatively intact capacity to provide appropriate responses in other unrelated or more remotely related aspects of the patient's life.

Example 4 : Patient is a 58-year-old Negro female with a left hemiplegia. The onset of the stroke occurred at night. The patient awoke and was aware of feeling a strange and un-

attached arm lying in bed next to her. Her first thought was that it belonged to her dead husband.

When first seen in the hospital she was disoriented for time but not for place or person. She exhibited explicit verbal denial of disability. The following is a verbatim abstract from an early interview:

Q. Do you feel anything wrong? A. No, only a headache.

Q. Which is your left hand? A. This. (Makes no sign as to what she is referring to.)

Q. Show it to me. A. Here it is. (Reaches over to left hand with right hand without looking toward left side and with difficulty extracts arm from under bedclothes.)

Q. Is it O.K.? A. Yes, it feels O.K.

Q. Any weakness? A. No.

Q. Move your hand. A. Away up in the air?

Q. Yes. (Patient makes no attempt to move her hand.)

Q. Why don't you move it? (No reply.)

Q. Can you move it? A. Yes. (Still makes no move.)

Q. I don't believe you can move it. A. Yes, I can. (Heatedly, but makes no move whatever.)

Q. Well, go on—move your hand. A. I'll do it right now. I'll put my hand on my head. (No move.)

Relevant and appropriate responses were elicited when questioned about matters in her own past.

The patient presented a relatively uncomplicated and realistic personality structure. The Rorschach findings confirm the impression of stable and strong personal attachments and a strong sense of fulfillment and gratification in her role as a mother. She appears to have accepted her lot and to be mainly concerned with meeting the realistic problems of living.

The functional deficits noted in this patient included anosognosia, disordered sensation on the impaired side, and personification of the left upper limb. Her initial subjective reactions resulted in the notion that this strange detached arm lying in bed next to her was that of her dead husband. She was sufficiently convinced of this to fear having the lights turned on, but did not persist in her fantasy once the lights were turned on. The relief of anxiety in this instance was associated with disproving this feeling about her arm. The initial identification did not occur on the basis of wish-

fulfillment. It simply appeared to be a felt impression arising out of her own past experience of lying in close proximity to a bodily appendage that was not part of her own body, namely, the arm of her husband. The personification represented an integration at a concrete level of the current perceptual alterations with related aspects of her past experience. The illusory feeling that did persist was a true anosognosia—an unawareness that she was unable to move the arm, and, conversely, a belief that she could do so. The feeling of the patient in the course of these trials resulted in a false belief that she had very little capacity to correct. Questioning in areas unrelated to the illness elicited appropriate responses.

The type of performance described above is characteristic of the moderate deficit group as a whole. There is a clear awareness of the interpersonal situation as such. There is an awareness of the examiner as existing external to and independent of the patient. The appropriateness of response varies with the subject under discussion. When areas of illness and defect are impinged upon, there is a sharp drop to a concrete, stereotyped level of response.

SEVERE DEFICIT GROUP (11 PATIENTS)

In these patients the deficit was of a generalized nature, with gross defects in orientation, memory, confabulation and limited attention span. They tended to appear indifferent or apathetic to their surroundings and did not initiate conversation in the interview situation.

Example 5: Patient, a 55-year-old white male with a left hemiplegia, was disoriented for time and place. He confabulated freely and misidentified those about him. The following is from an early interview:

Q. What is wrong with you? A. I got a cold, sore throat. I haven't seen you for a long time. (The patient then muttered some reference to household expenses.) How are you making out with that place of yours up the street—that rooming house of yours?

Q. Who am I? A. You're the manager here of the hotel, aren't you?

Q. Can you move your arm and leg? A. Sure, enough to handle tools. (The patient was unable to move his arm on the paralyzed side.) Slowly they are coming out of it—it takes

practice. I haven't seen your wife since you—since I'm back.

Q. What is the name of this place? A. Continental Hotel.

Q. What is the date? A. Twelfth of November, Armistice Day, 859. (Actually September 12, 1958.)

When questioning was directed to his past life he confabulated freely and tended to misidentify the examiner as a participant in these past events. He appeared to respond to the visual and auditory cues of the interpersonal situation as if he were reliving past events, or, as if the interview simply served as a prop around which to objectify and externalize his own inner experience. Internal referents dominated responses both in regard to the current illness and his own past.

In this group the deficit was of such a generalized nature that there was little or no appreciation of the interpersonal situation as such, that is, as a new experience containing elements external to the patients themselves. These patients appeared to be experiencing a waking form of dream consciousness in which all stimuli from the outside are either not attended to or evaded; or, if attended to, are reacted to as if they arose from internal sources and had internal referents alone. When specific responses pertaining to the afflicted part can be elicited, as when a patient responds that his arm was removed by a saw, they appear to be the result of thought processes which are inductive and based on analogy. One aspect of an external situation usurps the field and by induction leads to a generalization which is externally and objectively false, but internally consistent with what the patient is experiencing at the time. In the example just cited there is a sense of unconnectedness with the paralyzed arm which is interpreted at a concrete and mechanical level as the arm being physically separated from the body by a saw.

DISCUSSION

In the brain-damaged patient with moderate or severe deficit, the setting in which motivational factors have to be evaluated is qualitatively different from what it is in the mild group. There is a flexibility of form in the latter, with appropriate shifts from

abstract to concrete attitudes guided by the needs arising in a given situation. With progressive functional cerebral impairment the role of personality factors recedes as a determinant of behavior, and the residual capacities shape the response in greater and greater measure. This shift is best characterized in terms of Goldstein's concept of loss of abstract attitude. In patients in the severe deficit group this shift was global and enduring; in the moderate deficit group there were fluctuating levels of performance relative to the demands of the interpersonal situation.

Confusion arises in connection with the use of the term "denial." In ordinary psychiatric usage, it refers to a specific psychodynamic mechanism designed to so influence the demands of the interpersonal situation in which the patient finds himself as to enable him to function without anxiety by selectively pushing out of awareness a painful or disturbing aspect of his own existence. Denial is a mechanism arising out of an interpersonal context in the first place and designed to operate in that context. Much of what is interpreted as denial in the brain-damaged patient is such only when judged by the standards of normal waking behavior. When judged from the point of view of the patient and the level at which he can relate to the environment, the concept of biological avoidance appears to be a more felicitous designation, as it places the emphasis not on a need to deny, but on the reorganization of the self in relation to the stimuli impinging on it. Central to this whole discussion is the phenomenon of anosognosia(3). To think of this in denial terms implies an awareness by the patient of the deficit or defect and the denial of it to avoid anxiety. Admittedly this occurs in many patients in a later or recovery phase of the illness. The clinical impression one so often encounters in the initial phases, however, with these patients, is that the affected part drops out of awareness and in the reorganization that follows a kind of congealing process takes place based on the remembrance of the part. He appears to deny the existence of the limb or its dysfunction, but what he is actually doing is restricting his perceptual experience in line with what he now believes is his real situa-

tion. The factors operating to limit his awareness exist apart from the interpersonal context. He is not using denial as a psychodynamic mechanism, but as a convenient way of explaining certain felt reactions. The patient is encountering difficulty in relating to the deficit because of his incapacity to adopt the abstract attitude. It is only by means of the latter that he could link the defect to the rest of his existence in time and space. Instead, he deals with it at a concrete level by so ordering the external environment as to avoid reference verbally or in practice to the defect. The crucial question concerns the capacity of the patient to be aware of the defect and not an awareness that is suppressed in the service of avoiding anxiety. What emerges as apparent denial is the effort to cover up the areas of unawareness as these are encroached upon by the environment. The anxiety level becomes a function of the relative success the patient has in covering up or avoiding involvement in the deficit.

SUMMARY

The individual who has had a stroke is reacting to a situation of stress that has many unique features. Patients who have

experienced mild strokes with little or no residual mental impairment react to the stress in their own idiosyncratic fashion. Some will intergrate the experience successfully; others will become enmeshed in psychopathological manoeuvres of varying severity. In patients with moderate or severe brain damage, the situation is quite different. Here the unique features of the stroke are highlighted, the chief of these being that the very organ governing the adaptation to stress is itself impaired. The resulting clinical picture has to be evaluated now, not only in terms of what the experience means to the patient, but also in terms of the capacity the patient has for evaluating the situation.

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ROLE: A CONCEPT LINKING SOCIETY AND PERSONALITY

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Whereas biological, primarily somatic concepts (*i.e.*, humors, libido, instincts) have served medicine and medical psychology traditionally from Hippocrates to Freud, psychiatry today is increasingly confronted with concepts of a different order, derived by social scientists in the systematic study of social life, which present new perspectives for understanding human motivations and behavior. Inasmuch as attention to the work of fellow scientists is likely to contribute to progress in related fields of scientific endeavor, the discussion which follows is offered to a psychiatric audience.

The purpose of this review is to consider the development of a central, and perhaps integrative, concept in social and psychological science which has attracted steadily increasing attention in recent years: the concept of role. We shall begin theoretically and then proceed to some—by no means complete—implications and applications of role theory. In the theoretical part it may not be possible to avoid level-jumping (attempts to “physiologize” psychology or “sociologize” physiology). But, in the present state of our knowledge, this is hardly a serious crime simply because boundaries have not been sharply drawn and there is as yet no strict definition of the phenomena delimited by the fields of psychology, sociology, anthropology and psychiatry. It would appear that social scientists and psychiatrists look at the same data, but through different lenses.

STATUS AND ROLE

Ralph Linton introduced and defined the inter-related concepts of status and role in his anthropological text, *The Study of Man*, in 1936(6). Although social structure concepts have been employed by social scientists for a hundred years and have been used analytically by them for the past 25 years, psychiatrists have become aware of their usefulness only recently(5, 9). The

concepts of status and role, as Linton originally defined them, are relatively pure concepts delimited within a sociological frame of reference but, by virtue of their gradually increasing application, status and role have acquired a multiple relevance—a process not unlike cultural diffusion—in sociology, social psychology, and, more recently, in psychiatry. The concept of role has proved to be an increasingly useful and enlightening concept. Perhaps it may be shown to be a point or articulation between the areas delimited as the sociological (or what goes on outside a person) and the psychological (or what goes on inside a person) theoretical levels of analysis.

In a discussion of science and concepts, a simple definition of the term “concept” is offered by Chinoy who states “. . . a concept is a general term that refers to all members of a particular class of objects, events, persons, relationships, ideas—of any kind of unit or entity”(3). A concept, therefore, serves an organizing function, and science may be defined as the study of the relationships between phenomena or the concepts by means of which phenomena are expressed.

The status concept is fundamental to a conceptual grasp of role. Actually, status and role are inseparable and can be taken apart only for purposes of definition. In this connection, Parson's hyphenated term “status-role” is expressive(10). The functioning of society depends upon the presence of patterns for reciprocal behavior between individuals or groups of individuals. Patterns for reciprocal behavior are socially institutionalized (formalized) as status-role. Linton defined status as a position in a particular pattern which is “. . . distinct from the individual who may occupy it . . . (and) a collection of rights and duties”(6a). In this sense, status can include the “sum total of all the statuses”(6b) which an individual occupies. (This generalization to status has recently been particularized by Merton(8) who employs the term *status set* to refer to the multiple statuses an individual oc-

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cupies and the term *status sequence* for the chronological and developmental statuses which a person occupies through the life cycle.) "Thus," wrote Linton, "the status of Mr. Jones as a member of his community derives from the combination of all the statuses which he holds as a citizen, as an attorney, as a Mason, as a Methodist, as Mrs. Jones' husband, and so on" (6c). Having defined status, then, we can now view role as *status in action*. In Linton's words, "A role represents the dynamic aspect of status" (6d). Thus, what Mr. Jones *does* as a citizen, as an attorney, a Mason, a Methodist, as Mrs. Jones' husband, *etc.*, carries status into action and constitutes *role*. Thus, status and role function to reduce cultural patterns to individual expression.

Status and role, or status-role, can be socially *ascribed* or *achieved*. As Linton states, "The individual is socially assigned to a status and occupies it with relation to other statuses. When he puts the rights and duties which constitute the status into effect, he is performing a role" (6e). Obviously, a person *occupies* a status with its corresponding set of rights and duties, while he *performs* a role which is, then, normative behavior.

Status-role provides a means by which society socializes and "educates"—or organizes—its members. Roles become models by means of which the attitudes and behavior of an individual are made congruous with those of other individuals participating in the cultural pattern. Members of a society are recruited into roles via socialization processes which begin at birth, or soon thereafter, and continue throughout the life cycle in a manner reminiscent of Jacques' speech in *As You Like It* which begins: "All the world's a stage, and all the men and women merely players . . ."

REFERENCE POINTS

All societies use certain reference points for the ascription of status. Linton pointed out that such reference points are ascertainable at birth and he listed *sex, age, family relationships* (such as that of child to mother, uncle to nephew, *etc.*) and birth into *class* or *caste* as the important ones (6f). "In all societies the actual ascription of statuses to the individual is controlled by

a series of these reference points which together serves to delimit the field of his future participation in the life of the group" (6g). Action, therefore, and personality development (learning how to act) occur, to a large extent, within the confines of ascribed status and role. They differ widely from culture to culture and change with the times in any particular culture. The delicate, fainting lady of the late 19th century, as a cultural type, is as extinct as the dodo (6h). Approaching extinction also are the "classical" symptom neuroses, *grande hystérie*, and other forms of hysteria studied by physicians from Hippocrates to Freud and upon which Charcot, Breuer and Freud developed basic concepts of modern psychiatry. Expressions of the sick-role change with culture changes, even in the short space of two generations. (The relation of character change to culture change and the impact on psychiatric practice is discussed in detail by Allen Wheelis in his recent book) (13).

"Room to move around" is provided in most societies by the device of *achieved* status. Although most of the statuses in all social systems are ascribed, status can also be *achieved*. The day-to-day living of people in a society is largely handled by means of ascribed statuses which take no account of individual differences, qualities, abilities. As Linton says, "Most of the business of living can be conducted on a basis of habit, with little need for intelligence and none for special gifts" (6i). However, a person may employ his special qualities in a competitive effort to acquire *achieved* status which is left open in a society and is not assigned at birth. Although one's status-role in a particular family in a particular society may be largely *ascribed* by means of reference points of age, sex, class, and family relationships, other status-roles which a person occupies can be *achieved*, especially in other societal sub-groups, such as the work-group or the community, utilizing different reference points. For example, a 22-year-old male may be Mrs. Jones' son in a middle-class American family, but he may also be captain of the football team, or a junior executive, and husband and father in a community quite different in social class from the original Joneses.

ROLE BEHAVIOR

Status is a social structure concept inseparably related to cultural reference points of age, sex, class, or caste, sub-group membership (*i.e.*, family) *etc.* But status—the “collection of rights and duties” (rules of the game)—which may be occupied by a person can only find *expression* through the medium of personal, or so-called “individual” action. Status carried into action (role) constitutes observable and describable behavior. Role behavior can be studied and defined by means of controlled observation. Argyle(2), observes :

There may be said to be a *role* in the social structure sense when the behavior of occupants of a position . . . is modally distributed for a situation, or a class of situations or for each of several classes of situations, and if the mode differs significantly from those of adjacent positions. If the actual behavior of an individual is sufficiently similar to the modal behavior—say within one S.D.—it may be said to be *role-behavior*; this is a psychological concept, whereas role is a sociological one.

Twenty-five years ago, Allport(1) in deriving the J-curve hypothesis of conforming behavior, studied the distribution of behaviors in various situations : motorists stopping (or failing to stop) at traffic signals, time of arrival at work of factory employees, and the behavior of Catholic parishioners in stopping—or not stopping—to dip their fingers in holy water and make the sign of the cross. He concluded :

From the data so far obtained, it therefore appears that when we plot the distribution of behaviors in a situation where individuals are said generally to conform, we find the following condition : Rarely, if ever, do we find that all the individuals conform completely. A varying number conform only in partial degree. The proportions of these are distributed in a diminishing fashion as we proceed to the wider variations in the modal act. Their degree of diminution, moreover, becomes less as we proceed out toward the deviating extreme (1a).

Rather than the usual bell-shaped, normal probability distribution, Allport's data yielded a skewed curve which he called a “double J” or a curve with a single mode.

His work has been followed by a number of other studies employing controlled methods of observation to describe and discover standard modal behavior and the frequencies of behaviors deviating therefrom. Allport's data and that of others (for example, Dudycha's study(4) of the punctuality of college students in a variety of situations) show that most people do what they are taught to do (*i.e.*, punch the factory time-clock at 7 a.m., get to class on time), that is, their behavior would fall under the narrow peak in the “double-J” curve, whereas the partial conformers (called deviants or innovators according to one's point of view) are distributed in diminishing numbers outward toward the extremes from the modal act. The “double-J” curve of conforming behavior seems to typify the distribution of behavioral phenomena which involve learning. On the other hand, if we were to take the same subjects (factory workers, drivers, parishioners, college students) and measure certain unlearned, biological, characteristics such as height, length of bones, *etc.*, we would derive a bell-shaped, normal probability curve. Evolutionary biologists, following Darwin, have observed that variation is one of nature's strong points, perhaps even accounting for the survival of living forms in the struggle for existence. It might be said that social organization, borrowing no wisdom from biology in this regard, limits behavioral variation through conformity control and tends to press behavior into a narrow, modal, range.

SOCIETY AND PERSONALITY

The foregoing sections appear to make sense in a sociological frame of reference. And yet the term “psychological” has been used a number of times as if sociological and psychological frames of reference could overlap, superimpose, or in some other way, blend without loss of conceptual clarity. Such unification, of course, presents many unsolved theoretical problems. But perhaps an approach to integration can be made through the role concept. In the preceding section we tried to answer the question : Through the concept of role can we link so-called individual behavior, studied psychologically, with positional and situational

factors, studied sociologically? We now turn our attention to the question: Can the concept of role provide a point of articulation between the psychological and the sociological theoretical levels of analysis?

In defining the "three aspects of the structuring of a completely concrete system of social action" consisting of the *personality system*, the *social system*, and the *cultural system*, Parsons (10a) points out that, although inter-dependent and interpenetrating, one or the other system is not reducible to terms of one or a combination of the other two. He refers here to the "action" frame of reference. Parsons' concept of action cuts across, and is common to, all three systems (personality, social, and cultural) permitting certain transformations or translations between them but not providing a unified, or single system, theory of behavior—although he does not rule out the possibility of such unification on "some other theoretical level." The role concept also enables us to make translations between events in the sociological and in the psychological systems.

It appears feasible, with present knowledge, to view *role* (an element of organization in the social system) as significantly related to *ego* (an element of organization in the personality system). Relations between these concepts were, of course, anticipated by G. H. Mead in his concept of role-taking (7) and have been developed by other social scientists, psychologists, and, quite recently, psychiatrists (5). The psychoanalytic theory of object relations may prove useful in developing our understanding of the relations between ego, as a unit of the psychological system, and status-role, as a unit of the social system. The system of social relationships in which a person is involved is not only of situational significance but through "internalization" (or, better, *learning*) becomes constitutive of the personality itself. For example, it is generally agreed that the superego represents the internal reflection of moral commandments which are a part of the surrounding culture. It seems logical to assume that roles available in a culture are, similarly internalized (or learned), becoming part of the ego: the sense of "I," or "who I am and how I act." Such considerations militate

against explanations of individual behavior which rest solely upon organismic or mentalistic concepts and fail to take into account related social concepts which focus the organized social situation with which the "organism" interacts. We note today that, as this situational impingement upon personal behavior is increasingly comprehended, the inclusive explanatory power of 19th century physiological (*i.e.*, neuronal) and early 20th century psychological (*i.e.*, id-ego) concepts decreases. Is it more pertinent, we may ask, to study a behaving person as a hierarchy of reflexes, a repository of repressed impulses, or as an experiencing, transacting, learning *being* in a cultural situation? The latter model moves away from cross-section toward a longitudinal perspective of personality as a process of *being* in transaction with objects in socio-historical time: physical objects, social objects, and cultural objects (chairs, people, roles, beliefs, value patterns). Acting human beings are caught up in a world of defined behavior patterns with their corresponding normative orientation—a social world which not only affects but is affected by the people who participate variably in its patterns of living.

SOME IMPLICATIONS AND APPLICATIONS

No attempt can be made here to assess the impact of sociological thinking upon psychology and psychiatry in recent years, nor can we cite inclusively the work which has been done even in what might appear to be the relatively circumscribed area of role. However, we may single out for brief attention certain aspects of

1. Talcott Parsons' concept of the "sick" role in our society and some of the findings in regard to the psychiatric sick-role reported by Hollingshead and Redlich in their recent book, *Social Class and Mental Illness*, (5) and

2. T. Sarbin's concept of hypnotic role-taking.

Parsons formulates 4 institutionalized norms which characterize the roles of sick persons in our society:

1. First, is the exemption from normal social role responsibility . . .
2. The second closely related aspect is the

institutionalized definition that the sick person cannot be expected by "pulling himself together" to get well by an act of decision or will.

3. The third element is the definition of the state of being ill as itself undesirable with its obligation to want to "get well."

4. Finally, the fourth closely related element is the obligation . . . to seek *technically competent* help, namely . . . that of a physician and to *cooperate* with him in the process of trying to get well (10b).

Even a superficial glance at these norms gives one the impression that they are more appropriate to organic illness than to the functional disorders which comprise the bulk of psychiatry. Hollingshead and Redlich, in their research in the New Haven community, studied their application to psychiatric disorders and found: "... first, that most persons with neuroses are not exempted from normal social obligations. . . . Psychotics in all classes, however, are exempted from social obligations . . ." (5a). From this it would appear that the duties of one's role, in our society, cannot usually be abrogated for nervousness but *can* be abrogated for craziness. If this is true, there is no reason to doubt that both nervous people and "crazy" people in our society have learned this "rule of the game." It is quite possible, in fact, to view a psychosis as a most effective way of abrogating intolerable role expectations imposed upon a learning child by a psychotic, or potentially psychotic, parent.

Hollingshead and Redlich observe that most persons with neuroses are not released from normal social obligations; obviously, however, as they imply, some so-called neurotic people are. The social situation, and the individual's perception of it, both make a difference. For example, a patient may obtain prolonged hospitalization (in a general or psychiatric hospital) for the treatment of a psychoneurosis with corresponding exemption from social role responsibilities. However, an attending physician, or other professional employee on the staff of the same hospital, although he may be suffering from symptoms clinically similar to the patient's, will be expected to perform the daily duties of the work role. The patient permits himself to be socially de-

fined as a *patient*—by applying for help—with corresponding exemption from social responsibilities, whereas the professional employee, taking the role of a helping person, avoids being defined as one who needs help. Moreover, the implication here is that one takes the sick role at one's peril. This is the case because, in spite of the fact that in the sick role a person is not held responsible for helplessness, psychiatric help-seeking has negative connotations in our society nevertheless and may even affect other people's perceptions of one's achieved status. This is not the place, however, to discuss the connection between neurotic symptoms and the avoidance of felt obligations. Suffice it to say that exemption from social responsibility is the core of the sick role² and psychiatric help-seeking is not without its price.

3. Role-perception has been defined as the conscious recognition of the kind of behavior which will be approved in a certain role. According to Argyle, (2a)

When role perception is a major factor in behavior, the behavior is often called *role playing*. This covers all cases of acting, imitating, deliberately conforming, and in general creating the impression of being the occupant of a certain position, or creating certain perceptions in the audience.

T. Sarbin, whose research in hypnosis bears upon role theory, sees a close similarity between hypnotic behavior, which he defines as hypnotic role-taking, and the on-stage behavior of the dramatic actor (11). He has developed a socio-psychological concept of hypnotic behavior, concluding that the automatic behavior of the hypnotic subject is a form of role-taking which is congruent with the subject's self-concept; that is, the subject, like a dramatic actor, *wants* to perform the role of the hypnotized subject as he perceives it.

If the subject has an adequate perception of the role, if this perception is not incongruent

² Actually, chronic utilization of the sick-role (chronic functional illness, exaggeration of minimal organicity, "compensation neurosis" etc.) serves an exemption, broader than that defined by our technical concepts, namely, exemption from self-responsible action and its correlates of initiative and integrity.

with his self-perceptions, and if he has an appropriate amount of the role-taking aptitude, then he will produce all the dramatic phenomena of hypnosis merely because "the operator talks to him" (11a).⁸

Sarbin defines the congruence of role and self-concept as favorable motivation for the hypnotic and dramatic situations, pointing out that both dramatic and hypnotic roles are dependent upon it. "The chief difference," he observed, "in the two forms of role-taking was the degree of participation of the self in the role (levels of consciousness)" (11b). The stage actor is more fully conscious of his role than the hypnotized subject although some actors "lose themselves" in their parts more than others do. Where role perception is a major factor in behavior (as in hypnosis, acting, children's play, and perhaps hysterical and other behaviors sometimes colloquially referred to as "phony,") we are dealing with "as if" behavior in Sarbin's formulation. "As if" behavior is characterized by a high imaginative component. As such, it may appear to possess a certain "external" reality creating the approved impression in an audience, but emotional investment and depth are lacking, indeed, conflictual. That is to say, these roles are performed, or played with more or less emotional disengagement.

SUMMARY

The concept of role is considered to be a focal concept derived in the scientific study of social life to which social scientists and

⁸ If we apply here the activity-passivity model of the hypnotic situation described by Szasz and Hollender (12), the hypnotic subject, who perceives his role to be characterized by powerlessness, wants to have something done to or for him by a role-taker to whom he attributes power.

psychiatrists are increasingly turning their attention. A brief review of the development of this concept has been presented and attention called to its possible integrative function in the study of sociological and psychological phenomena. Some implications and applications of role theory are briefly discussed.

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THE OBSESSIONAL PERSONALITY AND OBSESSIONAL ILLNESS

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The obsessional personality was originally a description of premorbid personality characteristics in obsessional patients. The description was widely accepted and came to be applied to a wide range of people; it is now used to describe a type of personality whose possessors are said to be subject not only to obsessional illness but to depressive and anxiety states. With this widening of its scope has come a looseness in its usage. The term "obsessional" is used to describe both symptoms and personality traits, and often a person will be labelled obsessional on the strength of a single characteristic so that, to take an example, to be punctual is to be obsessional.

Despite its extensive use and misuse the description, even in its restricted use, has not been without critics. Freud(2) formulated his own anal-erotic character to describe the premorbid personality of obsessional patients and Lewis(7) noted other characteristics. A descriptive study of a series of obsessional neurotics provided the opportunity to re-examine these different points of view in their original context and assess their validity.

The three different descriptions of the premorbid personality in use must be examined in more detail. They are the conventional obsessional personality, the anal-erotic character of psychoanalysis and the typology introduced by Lewis.

The existence of the "obsessional personality" is widely accepted in English speaking psychiatry and is the most used of these descriptions. At the beginning of this century Kraepelin(6) wrote of the pedantry and concern over trivialities in the premorbid personality of obsessional patients, and Janet(4) described the accepted picture at length. The traits usually included in the description are: "excessive cleanliness, orderliness, pedantry, conscientiousness, uncertainty, inconclusive ways of thinking and acting; perhaps, also a fondness for

collecting things, including money; sexual disturbances, though not of any characteristic sort, are common." (Lewis, 8).

A rough-and-ready, practical description of this kind is open to criticism on the grounds of imprecise definition of its component traits and lack of proof of their co-existence. Lewis(7) noted that the traits could be restricted to one field and absent in another: a person might be over-orderly but not scrupulously clean and not a collector. He did not consider the evidence for the obsessional personality complete and substituted his own typology. Nevertheless, 7 out of 8 British and American textbooks describe an obsessional personality in terms similar to those above.

The anal-erotic character was first described by Freud(2) in 1908 as a "triad of characteristics which are almost always to be found together—orderliness, parsimoniousness and obstinacy." This personality profile differs in its aetiological assumption that the character arises from the dissipation of anal-eroticism. In its descriptive aspects it differs little. Usage of the term has been analysed and contrasted with current usage of the term "obsessional personality" in a previous paper(3). The content was found to differ only in emphasis. For descriptive purposes there is no point in distinguishing them. Here the term "obsessional personality" is preferred, being purely descriptive and without aetiological assumptions, but the results could apply equally to the anal-erotic character.

The third description was given by Lewis and arose from his dissatisfaction with existing ones. In chronic severe obsessional patients he observed two types of personality—one "obstinate, morose, irritable," the other "vacillating, uncertain of himself, submissive." His typology applies to personality in a restricted group of patients and has not been extended and generalised as has the obsessional personality.

For the present purposes then, only two descriptions need be considered—the conventional one and that of Lewis. What

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information is already available about their quantitative relation to obsessional illness?

Correlations between personality traits and the type of symptom shown were calculated for 400 mainly neurotic patients by Slater(11). The highest correlation ($r=0.76$) was between obsessional traits and symptoms, other correlations ranging from 0.5 for both hysterical and paranoid traits to 0.39 for depressive and 0.19 for hypochondriacal traits. This suggests that personality and illness are more closely related in obsessional than in other illnesses. Of the 120 obsessional patients investigated by Rüdin(10) 60% were insecure (selbstunsicheren) personalities before the illness, 30% were not, and 10% had compulsive traits in childhood but no other personality deviation prior to the onset of symptoms. Müller(9) confirmed the absence of the obsessional personality in some of his series of obsessional patients, but considered that the more severe the abnormality of personality structure the more severe was the course of the illness.

Lewis(7) gave figures neither for the conventional obsessional traits nor for his own typology in his 50 patients but thought that the personality might be as common in other groups of psychiatric patients since one third of his depressive patients showed obsessional traits and an even higher proportion of those with agitated depression.

While there is evidence that obsessional personality traits are of frequent occurrence in obsessional illness, there is a dearth of information on the incidence of the personality traits Lewis put forward and no comparisons of the two have been made.

METHOD

In the course of a study of the natural history of obsessional illness in 89 inpatients of a mental hospital, ratings were made of the premorbid personality as described by the patients and their relatives. These patients were divided diagnostically into a nuclear group showing obsessional and compulsive symptoms in a sustained symptom complex with no evidence of psychotic disturbance of thought or mood, or organic nervous illness. Other groups comprised those with no compulsive actions (phobic ruminative group), those in which the pos-

sibility of schizophrenia had been considered but rejected, those with depressive features, and a miscellaneous group where obsessional symptoms were associated with other illness, notably organic nervous disease.

For the present purpose the total group of patients with predominantly obsessional symptoms will be divided into two, the "nuclear" group of typical obsessive-compulsive states being separated from the others.

The list of obsessional characteristics given by Lewis was used and patients were rated for the presence or absence of each of: excessive cleanliness, orderliness, pedantry, conscientiousness, uncertainty, inconclusive thinking and acting, and fondness for collecting things. "Marked obsessional traits" represents the presence of 5 or more of the 7, "slight" the presence of 2 to 4, and "not obsessional" the presence of none or only one of those mentioned. In each case an estimate was made of the applicability of each of Lewis's two descriptions. All these ratings were based on observations by psychiatrist and relatives and not on the patients' accounts alone.

In 12 cases the age of onset was so early that no adult premorbid personality could be said to have existed, and these were omitted. Of the remaining 77, 31 were "nuclear" cases.

RESULTS

Only 12 of the 77 (16%) show no obsessional personality traits (Table 1). Sixty-five

TABLE 1
INCIDENCE OF OBSESSIONAL TRAITS

	Nuclear Group	Others	Total
Not obsessional	4	8	12
Slight obsessional traits	17	24	41
Marked obsessional traits	10	14	24
Total	31	46	77

(84%) show at least two and 24 (31%) show more than five. Of these patients with severe chronic obsessional illnesses the majority have shown traits of the obsessional character prior to illness and the various items making up the obsessional character are frequently associated in the one person.

The incidence of obsessional traits in the nuclear group of typical obsessive-compulsive states is no different from that in the rest of the group.

Only 30 of the 77 (39%) have one of the personality types proposed by Lewis; the majority cannot be described in this way (Table 2). In the 31 severe obsession-com-

mon as "obstinate, morose, irritable" personalities, and 18 of the 20 show obsessional traits.

DISCUSSION

The expectation that severe cases, such as made up this series, would show frequent anomalies of personality structure is supported by the results. The obsessional personality traits are widely applicable to these patients. One of Lewis's objections to their use was the lack of evidence that they cohere; that a third of the patients show 5 or more of the 7 examined is proof that they do cluster together.

In these quantitative terms the conventional traits are twice as applicable as the two types of Lewis. However, Lewis described his types as occurring in chronic severe obsessionals who had shown symptoms since childhood. While this group is without doubt chronic and severe, the 12 cases who showed symptoms from childhood were excluded. This was done in order to obtain an account of personality prior to illness; for if an attempt is made to measure traits in the presence of illness the borderline between them becomes difficult to demarcate. It is difficult to decide when uncertainty and vacillation become pathological, when orderliness and a need to check become ritual, and so on. The decision to assess personality only prior to illness was the only means of avoiding this problem. If the terms used by Lewis have any value as descriptions of personality, they should be discerned in severe and chronic patients before illness; if they have not, they may originally have been descriptions of symptoms rather than of personality.

They are applicable in 40% of the patients. While not so prominent numerically as the conventional traits, their importance may lie in distinguishing different kinds of obsessional personality.

In contrasting the obsessional personality as described in 8 British and American textbooks with the anal-erotic character as described by Freud(2), Jones(5) and Abraham(1), the differences in emphasis were interpreted in terms of the success or failure of the integration of the traits into the total personality(3). The trait of orderliness, for instance, can

TABLE 2

INCIDENCE OF TRAITS DESCRIBED BY LEWIS

	Nuclear Group Others		Total
Obstinate, morose, irritable	4	6	10
Submissive, vacillating, uncertain	8	12	20
Neither applicable	19	28	47

pulsive (the nuclear group) cases there was no suggestion that these types of character were more often present than in the rest of the group. In this group of patients the personality types of Lewis are not so applicable as the accepted traits.

The two methods of describing personality overlap (Table 3). The "uncertainty"

TABLE 3

RELATION OF LEWIS'S TYPES TO OBSESSIONAL PERSONALITY TRAITS

	Obsessional Traits None Slight Marked		
1. Obstinate, morose, irritable	1	8	1
2. Submissive; vacillating, uncertain	2	9	9
Neither applicable	9	24	14

and "inconclusive thinking and acting" items of the obsessional personality appear as "vacillating, uncertain" in the second of Lewis's types. This is reflected in the closer connection between obsessional traits and the "submissive, etc." group. The number of patients showing obsessional traits and also belonging to one or other of the Lewis types (27 out of 30) is significantly higher than the proportion (38 out of 47) of those showing obsessional traits in which neither Lewis type is applicable ($X^2=6.3$; significant at 0.02 level). "Submissive, vacillating and uncertain" personalities are twice as com-

be used successfully. Failure may be of two kinds: in one the patient suffers, in the second others suffer. One person may make his life a torment by his adherence to order, another may pride himself on his orderliness, imposing his standards on others and making them suffer. It was found that the psychoanalytic authors used terms implying success or a failure to get on with others (e.g. obstinate, power-loving, pedantic, avaricious). The obsessional personality descriptions laid more emphasis on the other type of failure: that in which the person suffers (e.g. indecisive, conforming, submissive).

Examining the two sets of terms used by Lewis it is clear that "obstinate, morose and irritable" are words implying that others suffer, while "submissive, vacillating uncertain" imply suffering for the patient. The division between them corresponds to the two types of failure already outlined. Their relative incidence is therefore of some interest.

Those who suffer are twice as common in this series as those who make others suffer. From a psychopathological view this is easily explained. The two forms of behaviour represent different methods of dealing with the same anxiety and insecurity, but making others suffer is more likely to be successful in avoiding neurosis than suffering oneself. One might be called psychopathic behaviour, the other neurotic. Accordingly those who suffer from their traits will be overrepresented in a series of obsessional patients. To establish this with certainty it would be necessary to have information about the incidence of the two types in the normal population.

SUMMARY AND CONCLUSIONS

An examination of pre-morbid personality in 77 inpatients with severe obsessional

states shows that obsessional personality and illness are intimately connected and that the conventional obsessional traits, present in 84% of the group, justify their general acceptance when re-examined in their original setting. The description by Lewis of "obstinate, morose, irritable" and "submissive, vacillating, uncertain" types was applicable in only 39%, but the results suggest that certain obsessional traits may predispose to obsessional illness more than others.

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CARDIAC ARREST AND ELECTROSHOCK THERAPY

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Over the past 5 years at Charity Hospital we have had 3 deaths attributed to electroshock treatment. This represents a mortality rate of 0.15% per patient and 0.015% per treatment. Two of the deaths were definitely felt to be secondary to cardiac arrest.

Although the mortality rate is extremely low with EST, cardiovascular deaths usually head the list, followed by cerebral and respiratory deaths. Following our first cardiac arrest, a thoracotomy set was made available in our EST treatment room. The following case report involves a cardiac arrest following EST which was treated with direct, manual cardiac massage.

Case Report.—A 24-year-old C.M. admitted to Charity Hospital on February 4, 1960, had a 3 week history of "nervousness," inability to sleep, feelings of unreality, ideas of reference, persecutory delusions, multiple, bizarre somatic complaints, and auditory hallucinations. Diagnosis was acute schizophrenic reaction, paranoid type. This was the patient's first episode of overt psychiatric illness. Physical examination including routine laboratory examinations, chest and spinal x-rays, and electrocardiogram were reported as within normal limits. On February 27 the patient was started on a course of EST. Each treatment was preceded by routine medication of 2 mg. levo-hyoscyamine (Bellafoline®), intramuscularly. After the 3rd treatment he complained of midback pain. Although spine x-rays were negative, he was commenced on 15 mg. Anectine i.v., with succeeding electrical treatments. By March 28, 1960 he had received 16 treatments with good improvement. On this date the patient received his 17th treatment. He appeared to recover and respond in the usual manner following the treatment, and he was taken to the recovery room. About 20 minutes later when the aide attempted to rouse the patient for return to the ward, he responded briefly and then became unresponsive and apneic. Immediate steps were taken to establish an airway and begin artificial respiration, while the patient's personal physician was called. The doctor came immediately but by this

time at least 10 minutes had elapsed. The patient had no pulse. Because of the initial excitement and confusion getting artificial respiration started, we had no idea exactly how long he had been in cardiac arrest so that immediate thoracotomy was instituted. The heart was found to be in asystole and cardiac massage was begun. A few minutes following massage, a weak, but spontaneous heart returned. Shortly afterwards an intravenous saline drip was started and ephedrine was given i.v. The heartbeat became stronger and more regular. An intra-tracheal airway was inserted and patient was respired with the bag breathing apparatus. Spontaneous respiration did not return although the heart continued beating. After 2 hrs. he was transferred to a Drinker respirator. Spontaneous respiration never did return and it was apparent that the respiratory center had sustained irreversible damage secondary to cardiac arrest and the accompanying anoxia. An EEG taken on the patient at this time was reported as, "compatible with non-functioning of the cerebral cortex." The patient died approximately 12 hours after thoracotomy. The gross post-mortem examination was negative except for the results of thoracotomy, tracheotomy, manipulation of the chest wall, and massage of the heart.

DISCUSSION

Neither of our patients was considered a "poor risk" patient and a number of "poor risk" patients have received EST without incidence. In our experience, the fact that a patient is in apparent good physical health, free of any cardiovascular disease or abnormality, does not mean that he may not suffer a cardiac arrest associated with EST, or on the other hand, a "poor risk" patient is any more prone to this catastrophe.

This brings up the possible physiological mechanisms for the cessation of the heart beat during this type of treatment and possible prevention of it.

There is no question that the grand mal seizure following the electrical stimulation of the brain in EST is accompanied by a marked vagal discharge. Richardson, *et al.*, (6) report vagal arrhythmias in 30% of patients receiving EST under anesthesia. On

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EKG tracings these were characterized by marked slowing and occasional standstill of the heart. However, according to the authors, adequate atropinization of patient (2.4 mg. or 1/25 gr. atropine), prior to treatment will completely block the cardiac portion of the vagus nerve.

At present, we routinely use levo-hyoscyamine as the antisialagogic vagolytic agent in the premedication of patients receiving EST. As reported by Trotti and Adriani(7) the antisialagogic effect of this drug is about twice that of atropine. The vagolytic effect on the heartbeat is about the same, i.e., equivalent doses of atropine and levo-hyoscyamine produced average pulse increases of 21 beats and 27 beats respectively.

There is no question that patients receiving EST should be premedicated with a suitable vagolytic drug and receive dosages of the order mentioned above. Conventional adult dosages of atropine (1/100-1/150 gr.) are not sufficient. Inadequate atropinization as an etiological factor in cardiac arrest associated with EST is a definite possibility although, as in our case, not the only factor.

Some of the EST deaths reported in patients who were simultaneously on one of the sympatholytic ataractics might operate in a similar manner. In this situation the patient receives a marked parasympathetic stimulation via the EST when he is already in a state of parasympathetic dominance secondary to the medication. Brachta and Hes(2) reporting on an EST death of a patient on 5-15 mg. reserpine per day, suggest that the parasympathetic overactivity and the sympathetic inhibition produced by Reserpine, plus the stress of EST, was enough to overwhelm the sympathetic regulatory mechanisms so that death ensued. Our first patient with cardiac arrest was on high doses of chlorpromazine. As a result of this experience we no longer give EST to patients who are on phenothiazine medication. However, other therapists continue to combine tranquilizers and EST and have had no difficulty(1, 5).

Drake and Ebaugh(3) report a case of an undiagnosed pheochromocytoma where patient was treated with EST and expired via cardiac arrest. This, in spite of an increased availability of sympathetic neuro-

hormones. In addition, Wilkinson(8) has described how patients vary in their pre-EST autonomic symptoms as well as their autonomic responses to EST not only among separate individuals but in the same patient from time to time. Apparently the explanation of cardiac arrest during EST is not a simple autonomic imbalance, or at least alternative explanations probably exist.

We are thus left in the rather disquieting position of:

1. Being unable to predict or anticipate a cardiac arrest associated with EST, at the present time.

2. Cardiac arrest does occur in conjunction with EST. Death of the patient results unless an adequate blood pressure can be maintained until the heart resumes its normal beat.

3. There are no certain preventative measures. (a) "Adequate" atropinization might be of some help in preventing cardiac arrest but this is not proven. (b) Avoidance of concomitant treatment with sympatholytic tranquilizers also may be helpful in preventing cardiac arrest but this also is not proven.

4. Until recently, failing a smart rap on the chest wall, the usual method of treating a cardiac arrest was via thoracotomy and cardiac massage.

While thoracotomy and direct, manual cardiac massage are dramatic and heroic measures, they are extremely traumatic events for patient, his relatives, and the doctor. Temporizing or hoping something will happen also does not work. Something has to be done and fast. The usually accepted time limit is 5 minutes before irreversible brain damage occurs.

First, all physicians who utilize EST as a treatment procedure must be aware that cardiac arrest can and does occur and must recognize it when it does.

Second, they must be able to treat it, preferably in a less fearsome and traumatic way than manual cardiac massage.

Recently, Kouwenhoven, Jude, and Knickerbocker(4) reported a method of closed chest cardiac massage which they have found effective in maintaining blood pressure and hence blood supply to the vital structures of the C.N.S. until, and if, the

heart resumes its beat. Their method is as follows :

With patient in a supine position ; preferably on a rigid support, the heel of one hand with the other on top of it is placed on the sternum just cephalad to the xiphoid. Firm pressure is applied vertically downward about 60 times/minute. At the end of each pressure stroke the hands are lifted slightly to permit full expansion of the chest. The operator should be so positioned that he can use his body weight in applying the pressure. Sufficient pressure should be used to move the sternum 3 or 4 cm. towards the vertebral column.

Closed chest cardiac massage provides some ventilation of the lungs and if there is only one person present in a case of arrest, attention should be concentrated on the massage. If there are two or more persons present, one should massage the heart while the other gives mouth to nose respiration.

This method has recently been utilized successfully in the Charity Hospital surgery. We feel that it could be effectively utilized in patients with cardiac arrest following EST.

SUMMARY

A case report involving a cardiac arrest in a patient following EST is given.

Possible mechanisms and prevention of this cardiac catastrophe is discussed.

The possibility is raised that closed chest cardiac massage could be utilized effectively in cardiac arrest associated with electroshock therapy.

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IMPROVEMENT—REAL OR APPARENT ?

A Seven Year Follow-Up of Children Hospitalized and Discharged From a Residential Setting¹

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In the last few years, a number of studies have been reported which conclude that psychotherapy with children and adults is no more effective in producing change than non-intervention. Those of us engaged in psychotherapeutic treatment, rather than being disheartened by the results from these investigations, find ourselves searching underlying reasons for this lack of objective proof for what we see taking place clinically. While we do not agree with Eysenk's *intent*, we do agree with his statement from the 1952 report, that "figures fail to support the hypothesis" for effectiveness of psychotherapy and, herein, lies the source of the dilemma. Figures cannot capture the subtleties of improvement, even if we could succeed in isolating the countless dimensions of change to be measured.

Since functional illness is a social phenomenon, improvement is also socially determined. And it is this network of complex interactions that makes it next to impossible to quantify improvement in any way that will yield a true picture.

In this paper, we are focusing on some of these factors which operate in confounding the results in follow-up data, in addition to reporting on what has become of patients who have received treatment in a specific setting. We are not attempting to set any baseline or ceiling for evaluating degree of improvement, but rather view improvement as a qualitative change in a patient's ability to cope with his environment, irrespective of original diagnosis or extent of illness. In other words, we believe that, as in other branches of medicine, if, after treatment, a patient is more comfortable than before, he is improved. If, indeed,

he is only more acceptable to his family or if he lives more satisfactorily within an institution than he could have at one time in his history, then he is improved.

The subjects of this survey are the 24 children who have received treatment and have been discharged from the Children's Residential Treatment Service of Western Psychiatric Institute and Clinic in Pittsburgh. The 14 bed unit was established in 1951 for treatment, training and research purposes related to the total problem of emotional disturbance in childhood. Only children up to age 12 years, usually with intact families, were accepted for treatment. Initially, the program offered only residential care, but in 1956, day-care was added to the service. Patients from both types of service are included in this report.

Briefly, the treatment consists of : 1. Milieu therapy conducted by workers under close supervision of the training staff ; 2. Individual psychotherapy for each child ; and 3. Parent counseling in individual and group sessions conducted by psychiatric social workers.

Electroshock has never been administered and very little use has been made of drugs. Only 2 children of the 24 have ever received ataractic drugs, and in each case only for a short time ; both were diagnosed as childhood schizophrenia.

To assess the present status of each patient of the sample, a questionnaire was designed to be sent to the parents of all the children, whether living at home or in institutions ; in the latter instance, questionnaires were also sent to the institutions. The questionnaire was designed to reflect both objective and subjective reality. Informants were asked to judge easily observed, overt behaviors of the kind that would also be likely to have been recorded in hospital charts. The three main areas of inquiry were : 1. Individual adjustment ; 2. Social adjustment ; and 3. Health. These 3 areas were subdivided into a total of 13 specific items. For example,

¹ Read at the 116th annual meeting of The American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

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under "individual adjustment," inquiry was concerned with how well the child could dress himself, communicate ideas, and in general be responsible for his own executive functions. His "social adjustment" was explored for the quality of his relationships to family, community and school. The "health" category covered general physical condition and any use of drugs. Each item calls for three different types of information in the evaluation of a given skill. The informant first judges, by multiple choice procedures, whether the patient is doing as well, less well, or better than normal children of the same age, or whether this area had never been a problem in the child's symptom picture. If the child is seen as above or below average, the parent is asked in each instance, to present in free response form the evidence on which this judgment was based in space provided for "comments" immediately below each block of multiple choice items. And finally, a 5-point rating scale is provided to indicate direction of change, if any, in this skill since discharge. A blank page is attached at the end of the questionnaire and respondents are invited to communicate any additional information that they feel might be helpful, thus furnishing a fourth type of material.

This four-pronged approach to evaluation permitted the authors to analyze returns for inconsistencies in judgment that emerge when one method of report is compared with another in the process of judging a single skill. We anticipated that personal motivation might distort a parent's perception of his child. A parent might, for example, see his child as expressing his ideas better than others, but reveal when he explains, that what he has clung to as a source of personal comfort is merely the child's ability to communicate well in some bizarre autistic fashion. From experience with our parent group, we also expected disparities in the other direction, *i.e.*, a reluctance to admit openly that the child is as competent as he should be.

Verbatim descriptions of behavior relative to questionnaire areas, were extracted from hospital charts, for each child. These behavioral samples were taken from records for 3 distinct points in time: on admission, midway in treatment, and on discharge.

These excerpts were collected from the records by a third person before the questionnaires were returned and were used by the authors as the data to be compared with the current behavioral reports provided by the parents or other informants.

Returns were received from 18 out of the 24 families of discharged patients. Questionnaires were sent by registered mail; 5 were returned because whereabouts were unknown; one was received and ignored. This 75% return was better than expected. All 5 institutions contacted reported on the 7 of our former patients in their care. Currently, ages of the children range from 7 to 20 years. Fourteen of the 24 cases were diagnosed on admission as childhood schizophrenia and 7 of these were non-verbal. Of the remaining 10, 7 were diagnosed as psychoneuroses or behavior disorders and 3 as organic brain damage with secondary behavior problems. At discharge, 17 (71%) were rated as improved, and 7 unimproved, according to hospital charts.

Surprised as we were with the high rate of return, we were even more surprised by the results revealed by the questionnaire. Based on good solid behavioral descriptions supplied by the parents, rather than on the checked or rated items, 8 of the 13 children seen as improved by the parents, are remarkably improved in the judgment of the authors. Five of these were diagnosed childhood schizophrenic, 3 being non-verbal on admission and now talking well; and 3 were diagnosed as psychoneurotic. Twelve of the 13 cases, seen as improved by the parents, live at home. Nine of the 13 had the diagnosis of childhood schizophrenia; 4 of these were non-verbal and are now talking. Restated, three-fourths of these childhood schizophrenics are seen by their parents as improved. Least improvement occurred in the organic group and most in the psychoneurotic group.

We have provided mimeographed sheets containing the finer numerical breakdowns to allow getting to the discussion of the interesting clinical impressions suggested by the qualitative features of various parents' reports. The questionnaire, as designed, proved to be very satisfactory in picking up inconsistencies in parental attitudes toward the child and in furnishing hints of the re-

lationship between these inconsistencies and the child's pathology. If this survey accomplished nothing else, it was well worth the effort, to have so completely satisfied ourselves that structured check lists or rating scales alone will not yield a meaningful picture of how well or badly a person is fitting into his society.

Among some of the over-all impressions that emerged from analyzing the qualitative aspects of the questionnaires were: that the parents of the children diagnosed as autistic tend to view them much as they are seen by clinicians and show internal consistency in reporting; parents of the brain damaged children both over-rate and show marked inconsistency in their ratings; parents of the psychoneurotic patients under-rate and are inconsistent; while the parents of the children diagnosed as childhood schizophrenics and more like adult schizophrenics in symptomatology, produced the most grossly distorted and inconsistent pictures.

We reiterate that we are only presenting these as "hints" of relationships. But that these relationships are even suggested in a sample of so few cases makes it seem worth while to throw them out for speculation as possible hypotheses to be tested on other samples.

Our first notions about the possible implications of such a breakdown have to do with the degree of responsibility that the parent may feel for precipitating or contributing to the child's illness. Since so much disagreement remains about the causal factors in infantile autism, the parents, at least in our setting, are told that the cause is unknown. Perhaps, with this cushion against feelings of involvement in the illness, they can see what is going on with their child without needing to distort or deny.

In contrast, the parents of the brain-injured children, who rate them as much better than they really know them to be, may feel that in some way they are guilty of not having given the child adequate physical protection, even when the condition was totally beyond their control. The reaction seems to be one of overcompensation and the message they are trying to convey is: "See how well my child is because I have taken such good care of him."

Degree of involvement of the parents in the illness of the neurotic child is clearly spelled out to them in any treatment program. In modern America, even in very unsophisticated layers of society, there is recognition of the significance of psychological insult. And though these parents may not consciously acknowledge their involvement, that they are aware seems to be reflected in their need to deny the competence that they actually report. They *need* to see the child as incompetent to keep the family dynamics in equilibrium.

The parents of the verbal schizophrenic children are similar in their ratings to the parents of the neurotic children in that they too tend to under-rate, and again, out of need to maintain the family balance. But they are dissimilar in that instead of just overlooking the contradictions in their evidence, they use fantastic logic to distort the meaning of the behavior that they cite. They *must* keep the child sick.

Distortions in reporting occurred most frequently among families where the history clearly identified gross involvement on the parents' part in precipitating the illness and least frequently among those with least involvement such as adoptive parents or ones who had not had early responsibility for the child as in cases of divorce and remarriage.

How satisfied the parents are with arrangements made for the child following discharge also seemed to color their answers to the questionnaire. In one case where the child had to be discharged because of age and no other facility could be found for continuing treatment, the parents, still angry at us, could only minimally comply on the evaluation task. In contrast, another family, extremely grateful to us for the excellent results obtained, wrote volumes of material. Still another family, dissatisfied with the present resources available to them, gave a glowing, and highly inaccurate, appraisal of the child in the hope that we might readmit him.

Another impression that emerges from the qualitative material uncovered in this survey, concerns environmental factors that influence outcome of illness. One girl, who was discharged as improved, is now at home in poor condition awaiting institution-

alization. An outside agency gave us a picture of total chaos within this family. Gradually, she gave up in the hopeless struggle to adjust to this pervasive confusion. The questionnaire from the family included the contradictory statements that she was much improved and that she was awaiting institutionalization.

Expectations for the child by those immediately involved with him also are a big factor in the eventual outcome of his illness. One of the formerly autistic non-verbal boys who is now verbal and doing exceptionally well is a good case in point. Although the parents had given up all hope for his recovery when they were told that he was both brain damaged and retarded, a nurse on the service insisted that this was a bright, emotionally disturbed child, and devoted herself to proving it. When he was returned to his family as dramatically improved, they were apparently able to sustain this improvement when given a new set of expectations.

And finally, to illustrate how social factors play a role in adjustment: one boy who received the American Legion Award in eighth grade for the best all-around student was proudly credited by his father with being the most "popular boy" in the class. The boy corrected him by saying, "You mean, I'm the least unpopular one." Here he clinically demonstrates the uncanny insight and unacculturated honesty of the true schizophrenic, but in this case, he is accepted by his society for his intellectual power and is given a citation. Again, we point out that improvement is determined by the environment and not by clinically established norms.

SUMMARY

This survey revealed a more hopeful outcome for this group of seriously sick children than previous reports have suggested. It is gratifying to find that so many are doing well and that others, doing less well, are so comfortably absorbed by their families. Most encouraging of all are the reports on the 4 non-verbal autistic children who now talk and are active in society outside the home. This is especially heartening when one considers how late in life it was before any intervention occurred for some of these

children. Outcome is related not only to original diagnosis but also to a complex of attitudinal and social factors. In many cases, one is left to conclude that the critical elements in improvement can never be isolated. Or, sometimes, improvement, like beauty, lies in the eye of the beholder.

DISCUSSION

FRANKLIN G. EBAUGH, M.D. (Denver, Colo.).—It is a privilege to comment upon a paper which makes such timely inquiry into a group of variables in human adjustment which have plagued therapists from the beginning. It is impossible to understand a patient without insight into the setting in which he must function, and too often it is equally impossible to gain an objective, yet empathically meaningful view of that setting. As physicians for the mentally ill, we, too, are defined by our "social climate." With increasing public awareness of mental health and illness, and strong medical focus on treatment of the "whole patient," these questions about the *milieu* of emotional illness becomes ever more pressing.

Fortunately we now realize that the psychotic, even the non-verbal, highly autistic child who does not seem to have formed initial lines of communication, is strongly and continuously influenced by his environment—in a most dynamic sense. This is one of the important implications in the data which Drs. Kane and Chambers present. Improvements occurring in children removed from "sick families," the occasional regression of improved patients upon return to their original environment where the pathological influences operate, and the factors of family attitude and satisfaction with the post-hospitalization arrangements made for the child all point to the dynamic environmental influence on psychosis. The sound-deadened isolation of the schizophrenic child is only apparent, not real.

Polemic arguments about treatment methods—psychotherapeutic, vs. physical, vs. "vitamin pills dispensed with a smile"—are, like speculations about "spontaneous recovery," only a testimony to how little real knowledge we have about the laws of interpersonal communication. By emphasizing this, and by focusing on assessing the interaction of family relationship variables, the authors have made a decided contribution. Implicit in their research report, too, is recognition of the fact that the study of human behavior remains on the first step of the ladder of scientific investigation. No amount of rigidly fragmented "experimentation" in human reactions can change or deny this. Only one

procedure can change it : observation and more observation. As the authors point out, their *ad hoc* quantifications and notes are more meaningful than the pre-categorized data collected via rating scales and multiple-choice means. My comments are not to be interpreted as a negation of sound experimental control, of course, but only as a mild reminder of the values to be found in the childlike curiosity from which most of the basic facts of our better-developed sciences are derived.

Relevant to this entire subject of methodology, observation, and psychotherapy with schizophrenic patients is a striking experiment in "family unit therapy" reported by Dr. Murray Bowen in a 1959 publication entitled, *Schizophrenia, An Integrated Approach*, and edited by Alfred Auerback. For purposes of study, fathers, mothers, siblings, and the schizophrenic patient in 4 separate families, lived together as a family unit on the ward in a research center. The family had entire responsibility for the care of the ill member, and carried on their usual outside activities as normally as possible. One family remained there for 2½ years; all periods of residence were long. Six other families participated on an out-patient basis.

The theoretical hypothesis regarded the schizophrenic symptoms in the patient as a manifestation of an active process that involved the entire family. A psychotherapeutic ap-

proach consistent with the working hypothesis required that the family members attend all psychotherapy hours together. An attempt was made to observe and relate to the family unit rather than to the individual family member. Some of the broad patterns of relationship functioning observed included a condition termed, "emotional divorce," between the parents. The family conflict seemed to remain in the father-mother-patient triad; other siblings had, perhaps at the expense of the patient, divorced themselves from participation and found their satisfactions outside the family unit. The most common family configuration was one in which the overadequate mother was attached to the helpless patient and the father remained peripheral to this intense twosome. If, during the psychotherapeutic process, the passive parent became more adequate, the formerly overadequate parent seemed to shift to the vacated position, thus maintaining the neurotic balance of the family. In those families in which parents could resolve the emotional divorce, the psychotic patient began to change toward more mature functioning.

It is in contributions such as the one just cited, and the work of Drs. Kane and Chambers, that we shall begin to understand the "ground rules" of interpersonal relationships—the ways in which they not only produce, but also perpetuate, mental health and illness.

PSYCHIATRIC FACILITIES IN CHICAGO

FRANCIS J. GERTY, M.D.¹

The last report on the Psychiatric Facilities of Chicago and surroundings was made at the annual meeting of the American Psychiatric Association in Chicago in 1957. At that time construction of the Illinois State Psychiatric Institute was in progress. The Institution is now functioning according to the plan formulated by the members of the Illinois Psychiatric Council during the preceding years.

Each of the 5 medical colleges, Illinois, Loyola, Northwestern and the University of Chicago and the Chicago Medical College supervises teaching and research in separate units of the Institute. The same is true of the Psychosomatic and Psychiatric Institute for Training and Research of the Michael Reese Hospital and of the Mental Health Services of the Department of Public Welfare of the State of Illinois. Approximately 60 patients have accommodations in each of these units. Treatment supervision for each unit is under the charge of physicians paid by the Department of Public Welfare but working under supervision of the Head of the Department of Psychiatry of each of the participating institutions. Consultants are provided from the same sources. Undergraduate medical students are taught in the wards of the Institute. There is a 3-year approved residency training program in psychiatry. The Institute is fully equipped for both psychological and physical means of research. A large auditorium is provided for holding medical meetings.

On July 1, 1961, the new State Pediatric Institute will be opened. This Institute is for treatment, teaching and research with mentally retarded children. It is intended that the Institute will accommodate between 500 and 600 children. Doctor Herbert Grossman

will serve as Director. It is intended that the Pediatric Institute, located adjoining the Illinois State Psychiatric Institute will have activities somewhat parallel to those of the State Psychiatric Institute.

In November, 1960, the electorate of Illinois approved a bond issue of \$150,000,000.00 for new construction and rehabilitation of the institutions of the Department of Public Welfare. Most of the institutions serve patients with mental illness and the major part of the expenditures will be for the improvement of the physical facilities of the mental health services. Governor Kerner was elected by a large majority of votes on a platform which had, as one of its chief planks, the improvement of services to the mentally ill. Legislation has just been introduced to provide for a separate Department of Mental Health under the direction of a psychiatrist. Included in the proposals to the legislature is a recommendation for an increase in the budget of the Department of Public Welfare of approximately \$39,000,000.00 intended chiefly for the provision of increased personnel in the mental hospitals and schools for the mentally retarded. It is intended to increase the number presently employed by over 4000 persons.

At the time of the 1957 report, construction of the new Presbyterian-St. Luke's Hospital was under way. The Hospital has been completed and its psychiatric unit of 72 beds which occupies the 12th and 13th floors of the new building, has been in operation for nearly 2 years.

The other psychiatric facilities reported upon in the American Journal of Psychiatry in 1956 and 1957 at the time of the last annual meetings of the Association in Chicago, still continue in operation and this report will serve as an appendix to them.

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CLINICAL NOTES

(The Clinical Notes report the findings of the authors and do not necessarily represent the opinions of the Journal.)

THE EFFECT OF MONASE IN DEPRESSIVE STATES : A MULTI-BLIND PILOT STUDY

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The purpose of the present paper is to present preliminary trial with a new amine-oxidase inhibitor in the treatment of depressive states.

The setting in which Monase² was administered is designated as "multi-blind" because it contains the following characteristics: 1. Pharmacotherapeutically blind unit; this consists of part of the research service at the Allan Memorial Institute where all pharmacotherapies are blind, i.e., the members of the service team (6 psychiatrists, 1 psychologist, 1 occupational therapist and 1 research nurse) are unaware of the nature and the regime of the drug administration. The research nurse distributes the drugs and adjusts the dosage according to the patients' response in consultation with the head of the unit. On the average, 5 new drugs and 1 or 2 placebos (potent and inert) are used simultaneously in this unit. 2. Multiple observers; this consists of the use of all members of the team for the final assessment of any given substance. The individual assessments are made according to a simple rating scale which in cases of depression consisted of the following items: behavioral observations (retardation, overt depressive features, number of hours of sleep, and weight loss); experiential observations (subjective feeling of depression, guilt feeling and feelings of hopelessness). Each item is rated from 1-4 (nil to marked) and the final assessment is an accumulation of these ratings.

Under the above regime, 30 patients (depressed) received Monase with an average daily dosage of 60 mg. (maximum 120

mg., minimum 30 mg.) for an average length of 20 days (maximum 30 days, minimum 6 days). There were 20 females and 10 males; average age 46. Diagnostically, they consisted of 13 neurotic and 17 psychotic depressions (5 involutional, 3 manic-depressive, 6 associated with schizophrenic symptoms and 3 senile).

A relatively identical group of 30 other depressed patients received placebo for an average period of 10 days. There were 18 females and 12 males; average age 48. Diagnostically they consisted of 13 neurotic and 17 psychotic depressions (6 involutional, 1 manic depressive, 6 associated with schizophrenic symptoms and 3 senile).

Fifteen patients (8 neurotic, 7 psychotic depressions) showed significant improvement, i.e., from moderate to marked (50%) in the Monase treated group in contrast with 4 out of 30 (13.3%) in the placebo treated group. The reason for the unexpectedly low responsivity of placebo group seemed to be the great intensity of depressives treated as inpatient, the relative impurity of depressions and the inclusion of mild improvements into nil category.

Side effects were, on the whole, relatively few and not very severe. These consisted of feelings of "jumpiness," increase in anxiety and irritability in 5 patients, sleepiness in 2, dizziness in 2, headaches in 2, nausea in 1, and blurred vision in 1. Biochemical studies consisting of white blood count and differential, alkaline phosphatase, transaminase, and urine analysis, once weekly, T.P.R. and blood pressure b.i.d did not show any abnormalities with the exception of 1 case because of leukopenia (WBC 3000) in which the drug was discontinued and leukopenia disappeared. In the placebo group, 1

¹ From McGill University, Department of Psychiatry and Allan Memorial Institute.

² Monase is manufactured by Upjohn Company.

patient developed marked urticaria the second day.

- From the above data, it was concluded that even though the effectiveness of Monase, percentagewise, was only 50%, but

due to the 13.3% placebo results in identical cases and due to the multiblind nature of the research setting, the drug could be classified as an adequately potent antidepressant.

A STUDY OF COMBINED THERAPY WITH STELAZINE AND "PARNATE" (SKF 385) IN CHRONIC ANERGIC SCHIZOPHRENICS

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Because of the current interest in combinations of a "tranquilizer" and an "energizer," a trial was made of a combination of Stelazine with Parnate (SKF 385), a new antidepressant. (Parnate is an amphetamine derivative and a monoamine oxidase inhibitor.) The patients selected for the study were 20 male schizophrenics with an average age of 48 years (range 36-56) and an average hospitalization of 22 years (range 13-33). Primary manifestations of psychopathology were disinterest and inactivity. No physical methods of treatment had been employed for several years, but most of the patients had been on a phenothiazine derivative prior to this study. All patients were on the same closed ward which housed 28 patients. A remotivation program with outside recreational and occupational activities had been under way for two years, but results had remained at a plateau for several months.

All 20 patients were placed on Stelazine for five weeks, during which time the attendants made weekly hospital adjustment ratings. After the fifth week the ratings were averaged for each individual. On the basis of these scores, the patients were then divided into two groups of 10 each, using paired comparisons to distribute observed psychopathology equally in the two groups. Group A then received both Stelazine and Parnate for 5 weeks while Group B continued on Stelazine alone. Even though each patient received active medication, placebos, identical in appearance, to the

Stelazine and Parnate, were used where necessary to insure that each patient received two capsules t.i.d.³ The dosage of Stelazine was individually adjusted by the ward physician (W.J.B.), according to therapeutic need and the presence of side effects. Dosage of Stelazine ranged from 2 mg. (in one susceptible patient) to 30 mg. daily, with an average of 20 mg. Parnate was given in the dosage of 30 mg. daily. No other drugs were used.

Screening for possible toxic effects included clinical examinations, blood counts, urinalyses and liver function studies, all with essentially negative results. Weight was unaffected; Parnate patients gained an average of one pound. No patients were hypertensive, and blood pressure was the same in the two groups (average 103/69 with Stelazine and 109/73 with Stelazine and Parnate). One patient, who had a blood pressure of 90/60 on Stelazine, fainted in the fifth week on Stelazine and Parnate. Blood pressure at that time was the same, 90/60. No persistent insomnia was noted.

Possible therapeutic effects were judged by weekly hospital adjustment ratings made by an attendant (unfamiliar with the experimental design) on each of the day shifts. This rating device is an abbreviated form of the Hospital Adjustment Scale.⁴

³ Appreciation is expressed to Smith Kline and French for preparing and furnishing the medications in identical capsules.

⁴ The abbreviated form, consisting of 25 items of the original 90 of the HAS has proved to be a useful and accurate assessment of hospital adjustment, and will be further described in a subsequent publication by Dr. Richard Dunham, Chief of Psychology, Dorothea Dix Hospital. Appreciation is expressed to Stanford University Press and Dr. James T. Ferguson for permission to use this scale.

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² Director of Research, Hospitals Board of Control, Raleigh, N. C.

TABLE 1
Culturally "Right" Scores on the
Abbreviated Hospital Adjustment Scale
(Possible Maximum=25)
10 Subjects Each Group

	WEEKS 2 THRU 5	WEEKS 7 THRU 10
GROUP A	Stelazine 9.8	Stelazine and Parnate 9.7
GROUP B	Stelazine 10.5	Continued Stelazine 12.0

By prior arrangement, the average for weeks 2-5 and 7-10 was selected for determining results. These are shown in Table 1. The maximum pathological score is 25, and the lower the score the better the hospital adjustment. Differences between the Stelazine and Stelazine-Parnate groups are inconsequential ($p > .20$). This is compatible with the direct observation of the two physicians.

Our conclusion is that, while Parnate appears to be non-toxic and may be beneficial in other clinical states, a Stelazine-Parnate combination did not give therapeutic benefits over Stelazine alone in this group of chronic anergic schizophrenic patients.

FLUPHENAZINE IN PRIVATE PSYCHIATRIC PRACTICE

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The efficacy of certain phenothiazine derivatives in the treatment of psychotic patients (1-5) has stimulated interest in new members of this series as they have become available for clinical trial. Among those most recently introduced is fluphenazine, a trifluoromethyl hydroxyethyl piperazine propyl derivative of phenothiazine. Fluphenazine is the most potent of the phenothiazines yet developed (6-8) with a rapid and sustained tranquilizing action (6-7) and other pharmacologic properties characteristic of this group of compounds (9). Over the past two years fluphenazine has been employed in the treatment of ambulant patients with a variety of mental disorders who were referred to this office for study. During that period fluphenazine proved to be a very useful drug, especially helpful in facilitating psychotherapy, even of those patients who had resisted usually adequate psychotherapy prior to its use.

METHODS AND MATERIALS

A total of 174 non-hospitalized patients was treated with fluphenazine; 16 were children, age range 4 to 16 years; 158 were adults between 19 and 79 years of age. All had psychiatric disorders, primarily chronic in nature, but in most cases they presented

acute symptoms for which treatment was sought. Sixty-nine of the 174 patients displayed psychotic manifestations such as confusion, delusions, hallucinations, ideas of reference, withdrawal and/or morbid depression or morbid fears, while 105 presented symptoms of emotional disorders characterized mainly by anxiety, tension, or depression. All but a few of the psychiatric patients had received previous psychiatric therapy which had included other tranquilizing agents: about one-third had undergone electroshock therapy, and most of the emotionally disturbed patients had also been treated previously with tranquilizing drugs as well as psychotherapy.

Fluphenazine was administered either intramuscularly or orally, usually in doses ranging from 0.5 mg. to 2.5 mg. once or twice a day. In only 5 cases did the daily dose exceed 5 mg. with 2 patients receiving 7.5 mg. and 3 being given 10 mg. of fluphenazine. Treatment was continued in the individual cases from 1 week to 24 months. The majority were treated for at least 2 months, and half were continued on the drug for at least 6 months, while approximately 20% received treatment with fluphenazine for a year or more.

Other medications such as amine oxidase inhibitors, sedatives, or antidepressants, as well as antiparkinsonian drugs, were pre-

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scribed as indicated. In some cases, other tranquilizing drugs were also added to the regimen, and each patient received psychotherapy throughout the period of observation.

RESULTS

Of the 174 patients, 7 were treated for too short a period to permit evaluation of the therapeutic results. Of the 167 patients in whom the results were evaluated, 117 (70%) showed a satisfactory response with complete or almost complete disappearance of the symptoms for which they had presented themselves for treatment. Among those showing a satisfactory recovery from the present attack of illness were a number with long histories of hospitalization during which they had undergone electroshock and other types of psychiatric therapies. Essentially the same proportion of psychotic patients responded satisfactorily as did those with emotional disorders. An additional 22 of the 167 patients who were evaluated displayed some relief of symptoms and increased cooperativeness after treatment with fluphenazine but in these the response was considered to be only "fair." The remaining 35 patients showed little or no improvement.

No reactions whatever to fluphenazine developed in 131 of the 174 patients, all unwanted effects being observed in 43, with those most frequently being wakefulness (38) and parkinson-like symptoms (33). In most cases all of the reactions could be controlled by reducing the dose and/or adding methanesulfonate (Cogentin) or other anti-parkinsonian drugs to the schedule, but in 14 the unwanted effects were so distressing that the drug was discontinued. Those effects which required withdrawal of treatment included "rubbery" legs (1), tension (1), leg cramps (2), oculogyric crisis (1),

blurred vision (1), sore mouth (1), restlessness (1), nervousness (2), akathisia (3), and dyskinesias of the face (1).

CONCLUSIONS

Fluphenazine (Prolixin) is a highly effective tranquilizing agent which may be administered with safety to non-hospitalized patients with a variety of psychiatric illnesses. The drug is especially helpful in facilitating psychotherapy. The almost universal relief of gastrointestinal distress in the patients treated with the drug, the absence of skin rash or photosensitivity or of observable hepatotoxicity, and the low incidence of akathisia made the drug especially useful. A very pleasant side effect reported by many patients was a sense of alertness which was beneficial in those who had been on large doses of chlorpromazine. Some were relieved from long-standing migraine headache or severe headache associated with the menses. In several others, severe allergic manifestations such as urticaria disappeared.

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IMPROVING INSULIN THERAPY WITH NEOSTIGMINE¹

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One of the difficulties in insulin coma therapy is that the patient who has been

gavaged (to terminate the treatment) may go deeper into coma instead of regaining consciousness. For example, the technique of insulin coma therapy used in the New Jersey State Hospital at Greystone Park is

¹ The neostigmine used in this project was the Hoffman-La Roche product Prostigmine.

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as follows. The patient's insulin dosage is gradually raised to the level where he goes into hypoglycemic coma 1 to 3 hours after the insulin injection as described by many authorities, including W. A. Horwitz(1), and he is allowed to remain in coma for progressively longer periods of time ranging from 5 minutes to 1 hour or so. The coma is terminated by gavage, consisting of instilling one quart of 40% sucrose via nasal tube into the patient's stomach. Ordinarily, the patient shows signs of coming out of the coma within 15 minutes (but, if not, he is given an intravenous injection of 50% glucose, 50 or 100 cc.). The sucrose is hydrolyzed by a specific enzyme (sucrase) into glucose and fructose(2) which are then absorbed by the small intestine(3). Sucrose, because of the inherent nature of the molecule, cannot be absorbed by the gastro-intestinal tract(4). Therefore, after gavage, the blood sugar level rises and the patient wakes up.

However, in about 5-10% of the cases, intravenous injections of glucose have to be used because the patient either goes deeper into coma or takes excessively long to come out of the coma. In these cases it was postulated that the patient has a low concentration or volume of sucrase, a prolonged emptying time of the stomach, or an impaired peristaltic activity of the gastro-intestinal tract leading to poor absorption of glucose and fructose. For such cases therefore, it was reasoned that, since neostigmine increases peristalsis(5) and shortens gastric emptying time, this might be a valuable drug in decreasing the number of intravenous injections that have to be given during ICT.

Three female patients and 1 male patient out of a group of 38 females and 23 males were found to require intravenous injections 100% of the time even though they had been gavaged during 3 to 8 previous insulin treatments. (Insulin coma treatments at Greystone Park are ordinarily given 3 days a week to the males and 3 days a week to the females alternately.) Therefore, 1 mg. of neostigmine was injected intramuscularly just before gavage to each of these patients. Two patients came out of the insulin coma

within 1 hour for the first time without intravenous injection of glucose, and the other two patients seemed to be in more shallow depths of coma than previously but had to be brought completely out of coma again by intravenous glucose. On successive treatment days, 1 mg. of neostigmine was given to those of this group who had come out of coma within 30 minutes of gavage, and the dosage was raised to 1½ mg. for the others. In addition, the neostigmine injection was given no later than 10:00 a.m. even if the gavage was performed later (the insulin injections are given at about 7:00 a.m. at Greystone Park). With this routine for the next 4 weeks, all 4 patients mentioned above have been routinely coming out of coma without intravenous injection, and the number of intravenous injections required for each ward therefore has been sharply reduced with a significant saving in time, effort, and expense.

SUMMARY

In insulin coma therapy, in those patients who regularly require intravenous injections of glucose to bring them out of coma, the intramuscular injection of 1 or 1½ mg. of neostigmine from 10 to 45 minutes before gavage with 1 quart of 40% sucrose resulted in a 100% elimination of intravenous injections required. This therefore is felt to be an important contribution to insulin coma therapy. In addition it may help materially in the re-establishment of insulin coma therapy at those mental hospitals where it was previously discontinued because of the greater number of personnel required to administer intravenous injections.

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THE EFFECT OF MEPROBAMATE (MILTOWN®), RO 1-9569/12 (NITOMAN®), AND SCH-6673 (TINDAL®) ON THE ODOR OF SCHIZOPHRENIC SWEAT³

KATHLEEN SMITH, M.D.,¹ AND ALFONSO CORZO MOODY, M.D.²

These exploratory studies were conducted in order to determine whether various tranquilizers remove the characteristic odor noticeable in the sweat of certain patients with the schizophrenic syndrome(1). In 1956, Pennington suggested that the acrid "skunk-like" odor of 4 catatonic patients disappeared after treatment with meprobamate and that this might be due to relief of anxiety with a decrease in the amount of sweat produced(2). In 1960, Gouldman and Rutherford reported that a phenothiazine derivative, Sch-6673, appeared to abolish the body odor of schizophrenic patients and postulated that if this odor is a product of a characteristic metabolic disturbance in schizophrenia, then, Sch-6673 may modify the disturbance(3).

METHOD

Selection of patients. Five male schizophrenic patients with the characteristic odor in easily discernible amounts were chosen by 3 observers with two years' experience in discriminating this odor from other odors ordinarily present in sweat. These 5 patients have been observed many times in the course of other studies and have this characteristic odor 100% of the time, whether ex-

amined by a cotton ball underarm sniff test, sniffing of the residue on a watch glass after ether extraction, or by rat-conditioning methods.

The patients live on the same ward and have the same diet and level of activity. No deodorants are used. In each case the previous medication was discontinued for one week.

Meprobamate⁴ study. Patients 1 and 5 received Miltown® 400 mgs. q.i.d. for 3 days, 800 mgs. q.i.d. for 3 days and finally, 1600 mgs. q.i.d. for 14 days.

Ro 1-9569/12 study. Patients 3 and 4 received Nitoman® 50 mgs. b.i.d. for 3 days, 50 mgs. t.i.d. for 9 days, and finally, 100 mgs. t.i.d. for 7 days.

Sch-6673 study. Patients 1 and 3 received Tindal® 20 mgs. t.i.d. for 9 days followed by 40 mgs. t.i.d. for 14 days. Patients 2 and 4 received a Tindal® placebo during the same period. Two of the observers did not know which of the 4 patients were receiving placebo.

Test method. A cotton ball on the end of forceps was rubbed in each armpit and immediately sniffed by the 3 observers. Results were recorded on a 1 to 4 plus scale. Sniff tests were done when the patients were selected, one week after no medication,

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³ We wish to thank Mrs. Patricia DeVign, R.N., St. Louis State Hospital, for her assistance.

⁴ Meprobamate (Miltown) was supplied by Wallace Laboratories, New Brunswick, N. J. The Sch-6673 (Tindal) and placebo were supplied by Schering Corporation, Bloomfield, N. J. Ro 1-9569/12 (Nitoman) was supplied by Hoffmann La Roche, Inc. Nutley 10, N. J.

TABLE 1
White Males With Schizophrenic Reactions

CASE	ONSET AGE	PRESENT AGE	ILLNESS (YRS.)	LENGTH OF STAY (YRS.)	ODOR	EARLY DIAGNOSIS FROM CHART	CURRENT DIAGNOSIS
1	20	39	19	16	++++	Catatonic Type	Catatonic Type
2	27	49	22	18	++++	Catatonic Type	Chr. Undiff. Type
3	18	55	37	24	++++	Simple Type	Chr. Undiff. Type
4	20	48	28	13	++++	Catatonic Type	Chr. Undiff. Type
5	37	67	30	30	++++	Hebephrenic Type	Catatonic Type
AVE.	24.4	51.6	27.2	20.2	++++		

before beginning the drug, at 3-4 day intervals, and at the end of each study.

RESULTS

No essential change in the quality or quantity of the characteristic odor was detected during the various trials. When a bath had been given the night before, the odor was still prominent on the following day. The clinical condition of the patients was unimproved during each trial period. No toxic reactions occurred.

DISCUSSION

The clinical impression that Miltown® eliminated the characteristic odor of schizophrenic sweat was not borne out after a more systematic study. The findings concerning Tindal®, likewise, could not be substantiated when a more direct method of testing was used. Whether deodorants were used intermittently by the patients was not reported. Possibly an odor that was not the "characteristic odor" was being monitored. For definitive answers a direct

chemical test for the substance responsible for this odor is essential.

Additional clinical observations on some of the above patients who also received other tranquilizers are available. The characteristic odor was not eliminated by therapeutic dosages of reserpine (Anquil®), chlorpromazine (Thorazine®), trifluoperazine (Stelazine®), prochlorperazine (Compazine®), and meprobamate (Equanil®).

CONCLUSIONS

The administration of several classes of tranquilizers under standard conditions failed to eliminate the characteristic odor found in certain schizophrenic patients.

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A FAILURE TO FIND DISTINCTIVE PERSONALITY FEATURES IN A GROUP OF OBESE MEN¹

NORRIS WEINBERG, Ph.D.,² MYER MENDELSON, M.D., AND
ALBERT STUNKARD, M.D.³

The notion that certain bodily illnesses occur in persons with specific kinds of personality has been a recurring theme in psychosomatic medicine. This notion was first systematically treated by Flanders Dunbar in her description of certain "personality profiles" purportedly specific for certain bodily illnesses. Since then a large number of reports have supported this specificity hypothesis, and have added to the types of personality characteristics and types of bodily illnesses which are held to be linked in some manner. Unfortunately, few of the purported body-mind relationships have

been tested and studies carried out with methodological rigor have sometimes not confirmed hypotheses based upon clinical impressions.

In view of the uncertain status of the problem of psychosomatic specificity, 18¹ obese men were examined for distinctive personality characteristics and were compared with a carefully matched control group. This appears to be the first such study of obese men. A similar study of obese women failed to find distinctive personality features.

METHOD AND MATERIALS

Eighteen markedly obese men, aged 19 to 60, were matched man-for-man for age, educational level, race, and referral source with 18 men of normal weight. Eleven of the subjects were consecutive obese male admissions to the General Medical Clinic of

¹ Supported in part by Research Grant M-3684 from the National Institute of Mental Health, U. S. Public Health Service.

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a University Hospital, while 4 were consecutive male admissions to the Psychiatric Clinic of this hospital during the same period of time; 3 were medical students. Median percent overweight was 53 with a range from 22 to 78.

All subjects were tested individually with a wide range of standard psychological tests: 1. Four sub-tests of the Wechsler-Bellevue Adult Intelligence Scale—two Verbal tests (Information and Vocabulary) and two Performance tests (Block Design and Digit Symbol); 2. The California Psychological Inventory; 3. The Leary Interpersonal Check List; 4. The Taylor Test for Manifest Anxiety; 5. The Thematic Apperception Test; and 6. The Draw-a-Man Test.

The literature on personality characteristics of obese persons was reviewed and the most widely accepted and distinctive features encountered were stated in a series of 6 hypotheses. An attempt was made to differentiate the obese and control subjects with respect to these hypotheses. Differences between the groups were tested by the appropriate non-parametric statistic for related samples, usually the Wilcoxon Test.

RESULTS

Hypothesis 1. Obese men are more anxious and neurotically disturbed than non-obese men. There was no difference between the groups on the Taylor Test for Manifest Anxiety or on the Well-Being Scale of the California Personality Inventory.

Hypothesis 2. Obese men describe themselves as more dominant, status-conscious and self-accepting at a conscious level, but reveal themselves as weaker and more dependent at less conscious levels. There was no difference between groups on the Dominance, Status, and Self-acceptance Scales of the California Psychological Inventory, the Dominance score on the Leary Interpersonal Check List, the weakness and dependence measures derived from the Thematic Apperception Test, or the Draw-a-Man Test.

Hypothesis 3. Obese men obtain higher scores on the verbal than on the performance subtests of the intelligence test. The obese group did score significantly higher on the Verbal than on the Performance sub-

tests of the Wechsler Adult Intelligence Scale (mean Verbal I.Q. 115.7 vs. mean Performance I.Q. 105.4). Curiously, however, the control group revealed a similar disparity (mean I.Q. 117.3 vs. mean Performance I.Q. 103.5). The reason for the discrepancy between Verbal and Performance I.Q.s was not determined.

Hypothesis 4. Obese men are more intellectually conforming than non-obese men. There was no difference between groups on the Achievement for Conformity Scale of the California Psychological Inventory.

Hypothesis 5. Obese men describe their mothers as stronger than their fathers. There were no differences between obese and non-obese men in their descriptions of their parents on the Leary Interpersonal Check List.

Hypothesis 6. Obese men are more feminine in their interests than non-obese men. There was no difference between groups on the Femininity Scale of the California Personality Inventory.

The results were thus negative for the hypotheses tested. Furthermore, the psychological tests did not reveal differences of any kind between obese and non-obese groups.

DISCUSSION

The hypotheses utilized in the present study were constructed from reports on diverse obese populations which included women and children and which were studied by a variety of clinical and psychological means. Our findings do not, therefore, contradict the validity of the hypotheses when applied to other groups of obese persons studied by other means. They do suggest that such hypotheses do not apply to obese men. It is possible that a larger and more homogeneous obese male population might show psychological characteristics which would differentiate it from a non-obese group. The failure to find even suggestive points of difference, however, in conjunction with Friedman's similar negative results with obese women,⁴ indicates caution in accepting purported personality profiles in obesity.

⁴ Friedman, J.: J. Consult. Psychol., 23: 524, 1959.

SUMMARY

Eighteen markedly obese men were carefully matched with 18 men of normal weight

and given a battery of psychological tests. No distinctive personality features were found.

DYSTONIC REACTIONS PRODUCED BY TRANQUILIZERS

• SOLOMON HIRSCH, M.D., AND DORIS L. HIRSCH, M.D.²

Dystonia—one of the more interesting of the side effects of the phenothiazines—has been mentioned in the literature as easily confused with a variety of neurological disorders, but perhaps a more common error is to explain the dystonia as either a catatonic or conversion phenomenon. Since the patient receiving the tranquilizers is already disturbed and the clinical picture of the dystonia is so bizarre, the physician is sometimes able to fit the symptoms with the patient's psychopathology and to interpret them dynamically.

Because of the confusing picture presented by these patients, it is considered worthwhile to present in some detail descriptions obtained from several patients with dystonia.

Case 1.—A 20-year-old married woman with chronic anxiety became more acutely anxious 1 month post-partum and received prochlorperazine 10 mg. from her family physician. Twenty hours later both the patient and her family became greatly alarmed over her strange activity. Suddenly she began to stare at the wall, her mouth opened and her tongue protruded. With effort she was able to close her mouth. These symptoms subsided in a few minutes but recurred in several hours accompanied by marked terror. The family physician, suspecting a psychosis, requested a psychiatric consultation.

At the time of psychiatric examination the patient was extremely panicky with a pulse rate of 160, lowering to 120 with reassurance. Neurological examination was negative. Although there was evidence of chronic anxiety there was no gross evidence of psychosis. However catatonia was suspected. Because of the patient's fearfulness, hospitalization was contemplated but no bed was available at the time. The drug was discontinued. At home her

motor symptoms and anxiety gradually subsided without recurrence.

Case 2.—A 20-year-old nurse received triflupromazine 10 mg. I M. for nausea and vomiting of pregnancy. The following is her own description of the effects.

"Shortly after the injection I became very restless. The muscles twitched all over my body. In half an hour my head went back and stayed there unless I pulled it forward. My tongue felt swollen, my jaw twisted to one side, my teeth were clenched. My speech was slurred.

"The doctor (who felt the symptoms were functional) gave me an injection of barbiturates and although I was very irritated by his attitude I fell asleep and the symptoms went away.

"The next day I was very drowsy and had 2 half hour episodes during which my jaw seemed to go funny and tight. I walked and it went away. I had no trouble after."

Case 3.—A 21-year-old schizophrenic girl on chlorpromazine 25 mg. q.i.d. reported 2 episodes occurring in a 3-week interval:

"I just have to keep looking up. It lasts about an hour. My eyes go up. I can pull them down but they don't stay down. I can move my eyes from side to side but it's hard—it's hard to keep holding them down."

These episodes occurred although the patient was on Cogentin, subsided and recurred spontaneously. There were no other symptoms and she was able to carry on except that she was afraid to cross streets during an attack.

Several other similar cases were seen and it is of interest that in all these patients the original impressions of the physicians were that the symptoms were functional or emotional in origin.

In summarizing observations on these and other patients, some general characteristics are apparent. The dystonic symptoms are usually sudden in onset, occur episodically,

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are often of brief duration, and occasionally are under partial voluntary control. The latter results in the patient's description sounding peculiar. Pallor or flushing may accompany the other manifestations. Fear is usually marked and often accompanied by feelings of "going crazy" or peculiar explanations for the symptoms. Usually there are no signs of associated Parkinsonism.

Specific clinical manifestations of dystonia include tonic contractions and myoclonic twitches of any unilateral or bilateral muscle groups. Hyperextension of the neck and trunk with the spine curved backward from the hip, often associated with twisting of the head backwards or to one side and

jerkings of the head occurs. Spasm of the jaw muscles is common with the mouth either tightly closed or held fixedly open with protrusion of the tongue. Speech is difficult at times. Perioral tremors, mandibular tics, and difficulty in swallowing are often associated. Oculogyric spasms have been observed. There is a striking similarity at times to symptoms observed in post-encephalitic states.

Prompt recognition of the symptomatology of dystonia as an entity in itself is essential both to avoid diagnostic confusion with other psychiatric conditions and to facilitate treatment.

COMBINED TRANLYCYPROMINE-TRIFLUOPERAZINE THERAPY IN THE TREATMENT OF PATIENTS WITH AGITATED DEPRESSIONS

STANLEY LESSE, M.D., MEd. Sc. D.¹

This report is based on a 14-month study of 100 patients with severe agitated depressions who were treated with tranlycypromine (Parnate, SKF)² in combination with trifluoperazine (Stelazine, SKF)² on an ambulatory basis. Tranlycypromine is a very potent non-hydrazine monamine oxidase inhibitor structurally related to the amphetamines and has an enzyme blocking period which is quite short compared with other monamine oxidase inhibitors. The drug has very few side effects.

The study was limited to patients who manifested marked anxiety, agitation, restlessness, severe depression and feelings of hopelessness. The vast majority were completely incapacitated vocationally and socially.

This type of patient was selected because in my experience the antidepressant drugs currently available, when evaluated statistically, are of significant benefit only in patients whose depressions are associated with

a marked decrease in psychomotor activity (1). In a previous study I found that the tranlycypromine alone was of no significant help in the treatment of agitated depressed patients (2). Trifluoperazine alone was of inconsistent benefit in a parallel study of 50 agitated depressed patients.

METHOD

Sixty-nine patients were women, ranging in age from 25 to 78 years (all but 8 were over 40), 31 were men aged 35 to 72. The duration of treatment varied from 2 weeks to 14 months.

The usual initial daily dosage was 10 mg. of tranlycypromine and 3 mg. of trifluoperazine (administered in combination) t.i.d. (in particularly severe cases q.i.d.). If the agitation was not too profound, I found that the trifluoperazine could be reduced to 2 mg. 3 or 4 times per day. Therefore, the key to the amount of trifluoperazine used was the degree of agitation manifested prior to the onset of therapy.

Those patients who responded well began to show definite beneficial results within 24-72 hours. If signs of improvement were not forthcoming by then, it was uncommon for this combination of drugs to be helpful.

¹ From the Neurological Institute of the Presbyterian Hospital of New York and the Department of Neurology, Columbia University.

² The drugs used in this study were supplied by Smith Kline and French Laboratories, Philadelphia, Pa.

Fifteen of the 100 patients were considered as achieving an Improvement Rating of 1 (Excellent) while 48 showed an Improvement Rating of 2 (Good). Thus 63 of the 100 patients had complete or almost complete remissions of their depressions and were able to function vocationally and socially on a high level within 2 to 4 weeks after starting. Fourteen patients had an Improvement Rating of 3 (Fair) while the remaining 23 showed no improvement.

Seventeen of the 37 patients showing Improvement Ratings 3 and 4 (Fair and Poor) were schizophrenics. In general, patients ill for less than 6 months had the best results. There were 11 patients ill for more than 3 years, who had previously received active psychotherapy and organic therapies without definite help, whose response to the tranlycypromine-trifluoperazine combination was very gratifying (Excellent or Good).

In previous studies with antidepressant drugs, I found that an improvement in psychomotor activity preceded any improvement in the depressed affect (1, 2, 3). Fifty-one (81%) of the 63 patients who obtained satisfactory results in this study showed this pattern of improvement.

During the 14-month study, 16 of the 63 patients who initially had Improvement Ratings 1 or 2 had severe exacerbations of their depressions. In 6 of these the exacerbation occurred while they were on the drug combination, in the 10 others the drug had been discontinued. Six of these 10 had excellent or good results when the tranlycypromine-trifluoperazine combination was again administered.

Adverse side effects were minimal. Five patients had slight stiffness of their limbs if the trifluoperazine dosage was in the range of 12 mg. per day. This was relieved by the addition of methane-sulphanate (Cogentin, Merck). Two patients had orthostatic hypotensive reactions of sufficient degree to warrant stopping the drugs.

CONCLUSIONS

The tranlycypromine-trifluoperazine combination is of definite benefit in the treatment of patients with severe agitated depressions. In the author's experience this combination represents the only psychopharmacologic antidepressant that is of proven worth in this particular very prevalent clinical group. While others have reported that this combination has been of benefit in the treatment of chronic, regressed and withdrawn patients (4) and in chronic refractory schizophrenics (5), I have not found this to be true. To the contrary, this combination is of benefit primarily in patients with a marked increase in psychomotor activity.

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CASE REPORTS

CHLORDIAZEPOXIDE HYDROCHLORIDE (LIBRIUM®) AND JAUNDICE: REPORT OF A CASE

JOSEPH CACIOPPO, M.D., AND SIDNEY MERLIS, M.D.¹

Severe untoward reactions have been infrequently reported with chlordiazepoxide hydrochloride (Librium®). This report is of interest because it is, to our knowledge, the first case in which jaundice occurred coincidentally with chlordiazepoxide therapy.

Case Report.—This 39-year-old white male patient had been hospitalized at Central Islip State Hospital for 6 months. He was diagnosed as schizophrenia, paranoid type, with convulsive disorder, grand mal and petit mal types. Since admission, partial seizure control was achieved on a regime of diphenylhydantoin sodium 90 mg. q.i.d., and phenobarbital 60 mg. q.i.d. On April 28, 1960, in addition to the above, he was given chlordiazepoxide in dosage of 25 mg. b.i.d. Five days later, on May 3, 1960, the patient was noted to have icteric sclerae and skin jaundice. There were no subjective complaints. The patient stated that he felt well and was quite unaware of this development. Laboratory workup on May 4 revealed significant hepatic abnormalities. He was admitted to the acute medical service

on May 6 in an ambulant and cooperative condition. Further questioning revealed that since beginning chlordiazepoxide therapy he had noted darkened urine and light stools. Physical examination was normal except for icteric sclerae and skin and a slight tenderness in the right hypochondrium. Fluoroscopy of the gastrointestinal tract was negative. X-ray studies for biliary tract calculi failed to reveal any abnormal calcification. The icterus persisted stubbornly and the overall clinical picture suggested an obstructive jaundice which seemed to run a prolonged course in spite of supportive therapy of fluids, withdrawal of drug and high vitamin intake. The course of the jaundice appeared to be unheralded by any infectious process, fever, general malaise or specific subjective complaints. The intensity of the jaundice as measured by the icteric index reached a peak 19 days after it was first noted. Abnormal laboratory findings persisted and gradually began returning to normal 3 weeks after the onset of his illness. Laboratory data are presented in Table 1. The patient continued jaundiced until June 18, a total of 58 days. He continued to receive diphenylhydantoin sodium and phenobarbital throughout his entire period of hospitalization except for a brief interruption of 4 days. Urine and stools

TABLE 1
LABORATORY WORK

	MAY 4	MAY 9	MAY 11	MAY 13	MAY 18	MAY 20	MAY 25	MAY 26	MAY 31	JUNE 2	JUNE 3	JUNE 20	JUNE 22	JUNE 24	AUG. 10
Icterus Index	30.1	52.4	56.6	39.6	49.6	62		60.8	24.9		15.4	11.2	8.0		10.3
Total Protein (Gms.)		70				6.9					6.6				7.9
Albumin (Gms.)		4.1				3.85					3.9				4.5
Globulin (Gms.)		2.9				3.05					2.7				3.4
A/G Ratio		1.4:1				1.26:1					1.4:1				1.3:1
Ceph. Floc.															
24 hrs.	2+	3+					3+			2+					Neg. Neg.
48 hrs.	2+	3+					3+			2+					Neg. Neg.
Alkaline Phosphatase					14						12		4		5
Bodansky Units															
Blood Count															
RBC (Millions)		4.49	4.28	4.49	4.82	4.49		4.85					4.49		
WBC (Thous.)		9.1	10.4	6.25	9.5	8.8		12.8					6.25		

returned to normal color June 2. On June 27 the patient was transferred to a continued treatment building where he has remained well.

DISCUSSION

The frequency of side effects and toxic reactions to tranquillizer therapy has been well recorded. The significance of this report can only be established by subsequent experiences of others. In the case described here, it cannot be completely ascertained that the jaundice was directly related to chlordiazepoxide therapy. The temporal coincidence of the beginning of medication and the onset of jaundice is highly sugges-

tive of a causal relationship. There was no evidence of viral hepatitis or liver disease of infectious origin present in the hospital at the time this patient became ill. While the possibility of viral hepatitis must be considered, the likelihood of its presence is uncertain. One cannot rule out the possibility that this patient had an exquisite sensitivity to the combination of diphenylhydantoin, phenobarbital and chlordiazepoxide. It is of interest to note that the onset of jaundice, unaccompanied by subjective symptoms, is in keeping with the usual history obtained in patients suffering from drug-induced icterus.

A CASE OF INHIBITION OF EJACULATION AS A SIDE EFFECT OF MELLARIL

HARBHAJAN SINGH, M.D.¹

INTRODUCTION

It is almost 2 years since Mellaril² has been introduced. The Sandoz Pharmaceutical Company at that time claimed that they had finally found a phenothiazine drug with the same potency as chlorpromazine but with no side effects whatsoever. This drug was accepted, open-heartedly, by practicing psychiatrists and physicians, who previously were quite cautious in their use of phenothiazine due to jaundice, parkinsonism and other side effects. It was soon discovered that, although this new drug was as potent as chlorpromazine, and had fewer side effects, it nevertheless was not virtually free of side effects. The most common symptoms noted were dryness of mouth, a sensation of stuffed up nose and some minor skin reactions. Later some workers reported Retinitis Pigmentosa in certain cases receiving high dosages. Recently we have come across a case demonstrating a rather unusual symptom.

Case Report: A 35-year-old, white, male patient was brought to the Emergency Department of the Ottawa Civic Hospital, Ottawa, Ontario, on September 6th, 1960, in a state of

acute anxiety and stomach distress which had evidently begun several weeks earlier and had been growing progressively more severe. Patient was sitting in a foetal position, unable to move or walk, complaining of pain all over the body and epigastric distress. He claimed he was unable to walk or move because of tension spasms in his arms, legs and neck.

According to the case history, the patient had been nervous and tense all his life, had been drinking excessively for the last 7 years and had been suffering from stomach ulcers for the last 5 years. During the past year, he had also been suffering from dizzy spells and excessive sweating.

The patient was given an intramuscular injection of 7½ gr. of sodium amytal and within half an hour was relaxed and started talking and walking. The patient was then put on Mellaril 100 mgm. t.i.d. and Gelusil (antacid) and was informed that he would be followed up and treated in the outpatient department only if he would guarantee to cease his excessive drinking.

When seen again the following week, the patient was much improved, but was manifesting an unusual symptom. He complained of a complete inhibition of ejaculation during coitus. He had the usual orgasm but there was no discharge associated with it. The patient was reassured, advised to continue with the Mellaril 100 mgm. t.i.d., and asked to return in 2 weeks. When the patient returned, he still

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² Thioridazine, Sandoz.

complained of this ejaculatory inhibition. At this time, to ascertain whether this was a side effect of Mellaril, the medication was changed to Stelabid No. 2,⁸ and when the patient returned for his next appointment 2 weeks later, he stated that he had normal ejaculation during

orgasm. Mellaril was again tried for a few days and gave rise to the previous symptom of inhibition of ejaculation.

CONCLUSION

A case is reported showing an unusual side effect due to Mellaril.

⁸ Combination of Darbid and Stelazine, S. K. F.

COMMENTS

EUGENIC STERILIZATION LEGAL IN 28 STATES

The *AMA News* (Jan. 9, 1961) lists the 28 states of the American Union in which laws provide for eugenic sterilization of various classes of persons. According to a staff attorney of the American Medical Association the classes affected include the feeble-minded, the insane, sexual deviates, and habitual criminals.

The states are : Alabama, Arizona, California, Connecticut, Delaware, Georgia, Idaho, Indiana, Iowa, Kansas, Maine, Michigan, Minnesota, Mississippi, Montana, Nebraska, New Hampshire, North Carolina, North Dakota, Oklahoma, Oregon, South Carolina, South Dakota, Utah, Vermont, Virginia, West Virginia, Wisconsin.

The *AMA News* states : "In these states, the physician authorized to perform the operation incurs no personal liability if the operation is performed in accordance with a valid law and without negligence. This holds true even over the objection of the person upon whom he operates."

Ten of the 28 states authorizing eugenic sterilization, namely Arizona, Indiana, Mississippi, New Hampshire, North Carolina, Oklahoma, South Carolina, Utah, Virginia, West Virginia, also provide for therapeutic sterilization; but this does not include sterilization for convenience.

Specifically, in 3 of the 28 states it is held to be a statutory crime to sterilize for other than eugenic or therapeutic purposes. These states are Connecticut, Kansas and Utah.

An A.M.A. staff attorney has pointed out (*AMA News*, Jan. 23, 1961) that : "There are no reported criminal cases involving a physician who performed a sterilization operation solely to suit the convenience of his patient." It may be assumed that no physician would perform a sterilization operation, other than for eugenic sterilization in states where this is authorized without the written agreement of both patient and spouse.

PSYCHE

This is the double conflict, the social opposition and the moral agony, that spirit suffers by being incarnate ; and yet if it were not incarnate it could not be individual, with a situation in space and time, a language and special perspective over nature and history : indeed, if not incarnate, spirit could not *exist* at all or be the inner light and perpetual witness of *life* in its dramatic vicissitudes.

—SANTAYANA

CORRESPONDENCE

THE COMMON FRONTIERS OF PSYCHIATRY AND LAW

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY:

SIR: The authors of the above named article, published in the December 1960 issue, discuss a wide range of topics lending themselves to challenging research. They range from correlation between physical illness and delinquency and factors affecting conformity in legislative policies to processes of struggle in the world community and professional education.

The sophisticated and all-embracing imagination of the authors has, however, one fears, stopped them from seeing the forest for the trees, from facing the stark fact that every year several million appear before the courts in this country, that three million persons are in jail, 1,600,000 for very serious felonies, and that crime constitutes an ever increasingly serious social problem.

Psychiatry should make the social contribution it is capable of, and not be restricted to helping private practice neurotics cope with their minor problems of living, nor concentrate too much on theoretical speculation. While many volumes, psychiatric and sociological, are being published on delinquency, there are only a few psychi-

atrists willing and able to treat serious law-breakers, adult or juvenile. Criminal psychiatry should be taught as a specialty. The failure to treat also handicaps research. How can we study the mentality, background, impact of legal situations, the working of the courts, unless we have sufficiently close contact with them? And how are we to get it unless we treat offenders and cooperate with the courts?

Enlightened courts are only too eager to rehabilitate offenders, but are handicapped by the dearth of constructive facilities. APTO has, since 1950, cooperated most satisfactorily with 17 courts in Greater New York. We are now in the process of setting up an APTO chapter in Washington, D. C., that can provide clinical service, at the request of courts and correctional agencies. Our Massachusetts Chapter, headed by Dr. Donald Russell, comprises 14 court clinics.

There is little doubt that if psychiatrists offered effective service, they would be warmly welcomed by most courts, probation services and correctional agencies all over the country.

Melitta Schmideberg, M.D.,
New York City.

REPLY TO THE FOREGOING

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY:

SIR: We congratulate Dr. Schmideberg on her energetic and effective efforts to provide disturbed offenders with treatment. We agree that psychiatric approaches to criminal behavior ought to be taught and that offenders ought to be treated. (The psychiatric author has been doing both for 15 years.)

However, we fail to see any incompatibility between providing criminals with ther-

apy and undertaking investigations designed to study the biologic, psychic, and social factors predisposing to social and behavioral pathology.

Indeed, it would seem self-evident that it is more rational to aim at preventing socially destructive behavior than to concentrate exclusively on treating disturbed individuals after the harmful acts have occurred.

Lawrence Zelic Freedman, M.D., and
Harold D. Lasswell, Ph.D.,
Stanford, Calif.

PSYCHOANALYTIC METHODOLOGY

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY:

SIR: I wonder whether a fundamental error—the incorrect acceptance of the initial response as essentially valid—may exist in psychoanalytic methodology, and whether this error may sometimes tend to undermine human cooperative attitudes and activity in therapeutic practice, in family living and in social theory.

Free association—giving voice to the initial response—is the basis of psychoanalytic and much of psychotherapeutic practice. "Say what comes to mind" is the admonition to the patient. The initial response which then spontaneously occurs is a fundamental part of the "material" upon which the treatment is based. In practice, this initial response tends to be taken as the truest and most accurate expression of the patient's most profound feelings, of his "Unconscious."

But physiology tells us that the initial response of any organism to a stimulus will be based on an exaggeration of its painful qualities, inasmuch as throughout the animal kingdom painful stimuli have priority over pleasurable ones at the moment of stimulation. This physiological consideration would indicate that the initial response would tend to be a distorted one, in which painful elements play a disproportionately large part. In humans, this distortion inevitably present in the initial response is usually corrected by subsequent reflection; for this reason, we are taught to think before

we speak. Unfortunately, however, psychoanalysis does not always seem completely to recognize the existence of the physiologically-determined distortion in the initial response, but instead seems at times to accept this response as valid, accurate and undistorted.

The initial response in psychoanalysis or psychotherapy will, of course, often be about other people or toward them. To the patient, the painful quality of these people will be exaggerated by the distortion inevitable in the initial response. Since interpersonal pain leads to interpersonal hostility, however, acceptance of the exaggerated initial painful quality of the other person as a valid appraisal will tend to cause an overestimation of interpersonal hostility. The tendency toward exaggeration of social conflict and of man's inhumanity to man which might result thereby would seem at least partly responsible for 2 unfortunate consequences: a disruptive effect within the families of some psychoanalyzed people and the pessimism so pervasive today about the possibility of human beings ever getting along harmoniously.

It is then perhaps an artifact of psychoanalytic method, rather than anything scientifically proven, which sometimes leads its supporters to see man's inhumanity and hostility to man as inevitable, both within the family and in society as a whole.

Nathaniel S. Lehrman, M.D.,
Great Neck, N. Y.

RECURRENT PSYCHOTIC DEPRESSION ASSOCIATED WITH HYPERCALCEMIA AND PARATHYROID ADENOMA

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY:

SIR: In volume 117, page 234 of the *American Journal of Psychiatry* Dr. Martin M. Mandel describes, under the heading "Recurrent Psychotic Depression Associated with Hypercalcemia and Parathyroid Adenoma" a case in which at the third recurrence of the depression a calcium determination revealed an elevated calcium level

in the blood serum and a following operation and removal of the parathyroid adenoma brought the patient back to health. In his opinion the symptoms of an adenoma of the parathyroid gland are undistinguishable from those of a depression.

However, psychotic depressions without parathyroid adenoma can be accompanied by an altered blood calcium level. The picture this patient presented would have been

named "agitated depression" according to the old nomenclature. In a paper named "Untersuchungen über den Stoffwechsel bei manischen und depressiven Zustandsbildern. II. Mitteilung: Veränderungen des Kalzium-und Kaliumspiegels des Gesamtblutes," in *Jahrbücher für Psychiatrie und Neurologie*, 1926, Vol. 45, page 32, the writer of this letter has shown that agitated depressions have an elevated calcium level

in the blood. In a monograph titled "Undersøgelser Over Nogle Af Blodets Elektrolyter (Ca, K, Na, H) Og Det Vegetative Nervesystem Særlig Hos Patienter Med Manio-Depressiv Psykose" published in 1927, Helgi Tómasson enlarged and verified my results.

Edith Klemperer, M.D.,
New York, N. Y.

REPLY TO THE FOREGOING

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY:

SIR: Thank you for the comment from Dr. Klemperer regarding my recent paper on "Recurrent Psychotic Depression Associated with Hypercalcemia and Parathyroid Adenoma." I state in this paper that the parathyroid adenoma was responsible for producing elevated serum calcium level which I believe to be the cause of this lady's current depressive episode. This has been observed by neurophysiologists who

have found the symptoms of hypercalcemia to be responsible for depression in man as well as in animals. I am also interested in Dr. Klemperer's observation regarding her own personal work with serum calcium and depressions; but in some of my recent research, I have not been able to substantiate her findings of elevated serum calcium levels in patients suffering from involutional psychotic depressions.

Martin M. Mandel, M.D.,
Philadelphia, Pa.

SOCIAL PSYCHIATRY

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY:

SIR: We wish to clarify and correct several points in our review of Social Psychiatry which appeared in the January 1961 issue of the Journal.

1. The sentence appearing on page 613, paragraph 4, should read: "The study of Knobloch and Pasamanick, regarding such variables as *mental deficiency* and seasonal variations in births, has recently been discussed and challenged . . ." The Sterling critique we alluded to referred only to a paper published in 1958, which we inadvertently did not cite in our bibliography. (Knobloch, H., and Pasamanick, B.: Seasonal Variation in the Births of the Mentally Deficient. *Am. J. Publ. Health*, 48: 1201.)

2. The two current publications of Pasamanick *et al.* which we did cite are further epidemiological studies of these investigators which we regard as being of general interest and importance.

3. Yet unpublished at the time of writing of our review was the reply to their critic by Doctors Pasamanick and Knobloch. (Pasamanick, B., and Knobloch, H.: *Am. J. Publ. Health*, 50: 1737, November, 1960.)

4. It has been brought to our attention that the following sentence in our article can be subjected to possible misinterpretation: "Aside from the specific points at issue in this particular controversy is the sobering realization that once results have been published as 'facts' they tend to assume a peculiar life of their own, becoming divorced from the body and context of the investigation from which they derived." Our intent was to paraphrase a general point Sterling makes. We did not wish to cast aspersion on Pasamanick's data, but merely wanted to express that important scientific data need to be corroborated. We neither wished to take sides in the controversy nor to make any invidious inferences. Our position is that only further studies and additional data will serve to clarify the facts. Pending such information, we wish to withhold any judgment. To avoid any misunderstanding, therefore, we are withdrawing the entire sentence.

M. P. Pepper, M.D.,
and F. C. Redlich, M.D.,
Yale University School of Medicine,
New Haven, Conn.

NEWS AND NOTES

FIRST LATIN AMERICAN CONGRESS OF PSYCHIATRY.—This Congress will be held in Caracas, Venezuela, May 28-31, 1961. This Congress has been organized under the sponsorship of the "Asociación Psiquiátrica de la América Latina."

President of the Congress is Dr. Mata de Gregorio of Venezuela, and Vice-Presidents are Dr. Pacheco E. Silva of Brazil and Dr. José Bustamante of Cuba. Other members of the Central Committee are Dr. Risquez Figuera and Dr. Ibañez Petersen of Venezuela.

Dr. Manuel Manrique of New York is the representative in the United States and Canada.

The official agenda will include: 1. Psychiatric care in Latin America; 2. Teaching of psychiatry in Latin America; 3. Discussion of modern research on epilepsy.

DR. FREYHAN GOES TO N.I.M.H.—Dr. Fritz A. Freyhan, assistant professor at the University of Pennsylvania and director of research at Delaware State Hospital has been appointed Clinical Professor of Psychiatry at the George Washington University and Deputy Chief of the Clinical Neuropharmacology Research Center in Charge of Clinical Studies at the National Institute of Mental Health, Bethesda, Md. The Research Center is a joint research facility of the N.I.M.H. and St. Elizabeths Hospital in Washington. The Center, which is physically located at St. Elizabeths Hospital, is under the immediate direction of Dr. Joel Elkes, Chairman of the joint committee on research, NIMH-SEH.

Dr. Freyhan, born in Germany, has been an American citizen since 1943. He has been associated with Delaware State Hospital, Farnhurst, Delaware, from 1940 until assuming his present duties at the Clinical Neuropharmacology Research Center, February 15, 1961.

CERTIFICATION OF PROFESSIONAL SOCIAL WORKERS.—A nationwide plan for the certification of professional social workers will be

put into effect on Dec. 1, 1961 by the National Association of Social Workers. Those social workers who apply for and obtain accreditation by an Academy of Certified Social Workers will be permitted to use the initials "aCSW" in signing their names and to display in their offices an annually renewable certificate.

At present more than 25,000 current full members of NASW will receive applications for membership in the Academy. Full members of NASW on Dec. 1 may be certified on that date if they have been members of the Association for two years of paid social work employment. Other full members on that date have two years to meet these conditions. Social workers entering NASW after Dec. 1 will have to meet more extensive requirements, including two years employment in one agency under supervision of a certified social worker.

NATIONAL INSTITUTES OF HEALTH GRANTS FOR STUDY OF AGING.—The NIH has made 64 grants to private institutions totaling \$1,427,883 for research in various aspects of aging. These grants have been made to investigators in 25 states and the District of Columbia, with one for studies at the University of Cape Town, South Africa.

Twenty-three grants, amounting to \$389,729, are continuations of previous projects, while 41, totaling \$1,038,154, are new grants. One new award by the Division of General Medical Sciences to Brown University, Providence, R. I., provides for the establishment for a university-wide center to study the socio-economic factors and to assess their relationship to the medical and biologic aspects of aging. Other institutions with similar grants are: Duke University, Albert Einstein College of Medicine, Western Reserve University, and the University of Miami School of Medicine.

The NIH is supporting 700 research projects related to aging at a total annual expenditure of \$16,234,564. These figures are for a one-year period ending Jan. 31, 1961.

THE NEW YORK STATE INSTITUTE FOR RESEARCH IN MENTAL DEFICIENCY.—Governor Rockefeller has announced that a new Institute for basic research in mental retardation, believed to be the first of its kind in the world, will be established adjacent to the Willowbrook State School on Staten Island on land already owned by New York State.

The Institute will be an independent facility with its own director and staff. It will comprise laboratories, clinical facilities, and administrative offices. Individual laboratories will provide for studies in psychology, biochemistry, pharmacology, genetics, and microbiology, biophysics, metabolism and pathology. There will also be facilities for animal studies.

Proximity to Willowbrook State School will provide a broad range of cases for study. The clinical areas of the Institute will contain several small wards constructed to permit continuous observation and recording of patients' behaviour.

DR. IRVING HYMAN.—Dr. Hyman, 52, professor and chairman of the department of neurology at the University of Buffalo Medical School and chief of neurology at Buffalo General Hospital, died March 7, 1961 in Roswell Park Memorial Institute.

In 1929, Dr. Hyman received his B.A. and his M.D. from the University of Buffalo and did postgraduate work in neuropathology at Maudsley Hospital, England. He is a diplomate of the American Board of Psychiatry and Neurology.

He entered the Medical Corps in 1942 as a major, serving as head of the neuro-psychiatric division of the 23rd General Hospital at Ft. Meade, Naples and Vittel. Two years ago he became chief of neurology at Buffalo General Hospital.

Being active in many professional and community organizations, Dr. Hyman was a member of the Executive Committee of the Medical School and director of electroencephalography at both General and Milard Fillmore Hospitals.

1961 WORKSHOP IN THE RORSCHACH TECHNIQUE.—This workshop, jointly sponsored by Claremont Graduate School in Claremont

and Childrens Hospital; Los Angeles, will be held September 3 to 15 at Acilomar Conference Grounds, Pacific Grove, Calif. It will be devoted to the study of projective techniques as used with children; a number of courses will be available.

Tuition is \$50.00. For applications write to Dr. Bruno Klopfer, P.O. Box 2971, Carmel, Calif. before Aug. 1. Qualified graduates accepted for the workshop may apply for 2 units of credit (Psychology 243, or 244a,b,c) to the Claremont Graduate School, Claremont, Calif. before Aug. 1.

INSTITUT ALBERT-PREVOST ACCREDITED.—The Institut Albert-Prévost of Montreal, Canada, has recently been fully approved by the Central Inspection Board.

At the present time, only 76 hospitals have been given full accreditation by the American Psychiatric Association, a distinction held by only 2 other psychiatric hospitals in Canada. This approval was granted following a comprehensive survey and a rating of the hospital based on standards formulated by the Committee on Standards and Policies of hospitals and clinics.

The Institution is affiliated with the University of Montreal, Department of Psychiatry, for under and postgraduate training of residents, psychologists, social workers and psychiatric nurses.

AMERICAN PSYCHOLOGICAL ASSOCIATION.—The 69th Annual Convention of the American Psychological Association will be held at the Commodore, Biltmore and Roosevelt Hotels in New York City, August 31-September 6, 1961.

Members and guests will not only attend meetings and read papers, but will also visit the many exhibits provided to catch up on recent developments in instrumentation, tests, books and other publications, etc.

For regulations and forms for the 1961 Convention write to: Mr. George S. Speer, Institute for Psychological Services, Illinois Institute of Technology, 3329 S. Federal St., Chicago 16, Ill.

APPOINTMENT OF DR. RICHARD L. JENKINS AS PROFESSOR OF CHILD PSYCHIATRY.—This appointment to the Department of Psychia-

try at the University of Iowa has been announced. Dr. Jenkins had previously been with the Veterans' Administration as Director of the Psychiatric Evaluation Project. Prior to this he worked in child psychiatry. After serving as Pediatrician at the Institute for Juvenile Research Dr. Jenkins studied with Dr. Adolf Meyer as a Rockefeller Fellow. He served as psychiatrist at the New York State Training School for Boys at Warwick and at the Michigan Child Guidance Institute in Ann Arbor. He returned to the Institute for Juvenile Research, first as chief psychiatrist, then as acting director. Following this, he was psychiatrist in the Health Service of the University of Illinois at Urbana.

DR. HAMBURG TO HEAD PSYCHIATRY AT STANFORD.—Dr. David A. Hamburg, chief of the Adult Psychiatry Branch of the National Institute of Mental Health in Bethesda, Md., has been appointed professor and executive head of the department of psychiatry of the Stanford University School of Medicine. He will assume his new duties Aug. 1, 1961.

With the appointment of the new dean, Dr. Robert H. Alway in 1952, a reorganization plan was adopted to make the medical school an integral part of the University. To this end six heads have been appointed, Dr. Hamburg being the last.

ALFRED KORZYBSKI MEMORIAL MEETING.

—This annual Memorial Meeting took place on the evening of Apr. 20, at the Harvard Club in New York City. Robert R. Blake, professor of psychology at the University of Texas, and organizational consultant, spoke on "From Industrial Warfare to Collaboration: A Behavioral Science Approach."

THE NEW YORK ACADEMY OF SCIENCES.

A conference on "Fundamentals of Psychology: The Psychology of the Self" will be held under the auspices of this Academy at the Barbizon-Plaza Hotel in New York City on May 11 and 12, 1961.

An invitation to attend the conference will be issued to interested professional persons upon request. There is no registration or other obligation of fee for those attend-

ing. Such requests should be addressed to The Executive Director, The New York Academy of Sciences, 2 East 63rd Street, New York 21, N.Y.

DR. PASAMANICK HONORED.—Dr. Benjamin Pasamanick, Professor of Psychiatry at Ohio State University and Director of Research at the Columbus Psychiatric Institute, received the \$500 Stratton Award of the American Psychopathological Association for 1961 for his studies on the epidemiology of mental disorder. Dr. Pasamanick has received the two major awards for research in psychiatry given by national organizations, having been awarded the Hofheimer Prize of the American Psychiatric Association in 1949 for his studies on child development.

INSTITUTIONALIZING YOUNG DEFECTIVES.

An experimental program to provide comprehensive community care for retarded infants and their families was initiated at the New York Medical College, Flower and Fifth Avenue Hospitals, New York City, by the New York State Department of Mental Hygiene on March 1, 1961. The purpose is to determine whether such service can reduce the need for institutionalization of the young retarded.

The two-year project will be financed by a \$60,000 yearly grant from the Department of Mental Hygiene. Mongoloid retardates under 5 years of age from the New York City area will be selected from existing department waiting lists for the study.

Deputy Commissioner Pense reports that the number of applications for admission of children under 5 has increased steadily in recent years; approximately 40 applications are filed monthly in the New York City area. It is hoped that if parents are given appropriate advice as well as emotional support through psychiatric and social work methods, many of these children could be cared for at home for a number of years.

PSYCHIATRIC AND NEUROLOGICAL CONGRESS IN THE FRENCH LANGUAGE.

—This Congress will hold its 59th session at Montpellier, July 10-15, 1961. At the psychiatric section Messrs. Warot and Fossati (Lille)

will discuss the endocrine psychoses.

In the neurological section Messrs. Pellegrin and Darcourt (Marseille-Nice) will report on the occipital lobe in the light of new neurosurgical and neurophysiological findings.

Representing the forensic section Monsieur J. Ley (Bruxelles) will speak on the medico-psychological and social bases of the criminal law.

Dr. Paul Cossa, 29 Boulevard Victor-Hugo, Nice, is the Secretary General of this Congress.

RESEARCH PROJECT ON HABIT FORMATION AND DRUG ADDICTION.—The new *Monograph Series on Child Psychiatry*, published by Pergamon Press, plans a volume on habit formation related to foods and medicines and drug addiction in youth from infancy to age 20. Reports on individual cases and any kind of experiences with such pathology will be welcomed. All material should be sent to the editor, Dr. Ernest Harms, 158 East 95th Street, New York, N. Y.

CONFERENCE ON DREAMS.—On May 24, 1961, 8:30 p.m. at the New York Academy of Medicine, the Association for the Ad-

vancement of Psychoanalysis will hold a meeting devoted to "The Dream—A Mobilizing Force in Therapy." The principle speaker will be Dr. Frederick A. Weiss, whose concepts of dream interpretation embrace the contributions of all analytic schools. The discussants are Dr. Harry Gershman and Dr. Edward S. Tauber (by invitation).

PSYCHODRAMA AND GROUP PSYCHOTHERAPY.—The American Academy of Psychodrama and Group Psychotherapy will hold a one-day meeting at the Morrison Hotel, Chicago, Ill., on Sunday, May 7, 1961. Participants may write to Dr. Robert S. Drews (M.A.P.A.), President, 12500 Broadstreet Blvd., Detroit 4, Mich.

PROFESSOR FRANKL COMES TO HARVARD.—Dr. Viktor E. Frankl, Professor of Psychiatry at the University of Vienna and head of the Neurological Department of the Vienna Poliklinik, comes to Harvard University for the summer session, June 26 to August 18, 1961. He will offer the Course S182—The Abnormal Personality, 9-10:00 A.M., Monday through Friday; and Seminar: Existence and Values: Foundations of Logotherapy, Tuesday and Thursday, 2-4:00 P.M.

PRESENTING PAPERS

In my opinion the reading aloud of a written paper is a cardinal sin, as deplorable as meretricious writing; it is a wicked procedure, utterly contemptuous of the audience and unfair to it.

—GEORGE SARTON
Historian of Science

EXPERIENCE

We learn from experience that men never learn anything from experience.

—C. B. SHAW

BOOK REVIEWS

AMERICAN HANDBOOK OF PSYCHIATRY. Edited by *Silvano Arieti*. Editorial Board: *Kenneth E. Appel, David Blain, Norman Cameron, Kurt Goldstein, Lawrence C. Kolb*. (New York: Basic Books, Inc. 1959. Volume One, pp. 999, Volume Two, pp. 1099.)

The editor has done a remarkable job in record time. There are more than 2,000 pages in 100 chapters and 15 main parts reaching from a pedestrian first historical chapter over Zen Buddhism and Martin Buber to Mental Hygiene and psychiatric organizations in the U.S.A. There is first a general part with an admirably concise and solid chapter on genetics by Kallman, a part on psychoneuroses and the like, a part on the functional psychoses most of which is covered by Arieti quite satisfactorily. Part Four contains Psychopathies and Addictions, Part Five, Psychosomatic Medicine; here is an interesting report on disturbances of the body image by L. C. Kolb. Parts Six and Seven deal with Childhood and Adolescence and with Language, Speech, and Communications, respectively. Part Eight, Organic Conditions, is the beginning of Volume Two. In the first chapter on neurosyphilitic conditions, W. L. Bruetsch has done very well. There are useful contributions on Postencephalitic Conditions by Hans Strauss and on Psychoses with Huntington's Disease by Bigelow, Roizin, and Kaufman.

Part Nine brings the psychotherapies, Part Ten the Psychoanalytic Therapies. In Part Eleven the great experience of Kalinowsky on Convulsive Shock, of Freeman on Psychosurgery and of Hoch on Drug Therapy are welcome and unusually helpful. In Part Twelve, among other topics, Neurophysiology is done by Gerard, Neurology by Cobb—it is not possible to mention everything and everybody.

Part Thirteen has a touch of Philosophy, Religion, and, as mentioned, Zen Buddhism and Buber. The last two chapters are dedicated to management and care of the patient and to legal, administrative, didactical, and preventive psychiatry.

This is quite a *tour de force*—is it not? It is obvious that not all the chapters can be equally good. At any rate, this *Handbook* may be used advantageously by the experienced psychiatrist; it ought not to be recommended to the beginner.

The historian (Nolan Lewis) opines that since 1937 an American School developed in

Psychiatry. No use to argue about this claim as one would have to define "school" first. That the attitude of the American Psychiatrist is fundamentally pragmatic is not news—not bad news, anyway. For this reviewer, the nosological kinship to Kraepelin's system is impressive in this work. It is, for this reviewer, no less impressive that, if he is counting correctly, of 111 contributors there were 96 physicians, *i.e.*, doctors of medicine. A considerable number of the contributors got their training abroad. Arieti is a graduate of the University of Pisa (Italy) Medical School.

Arieti has made some very short and clear remarks on the Existentialist School (pp. 423-424) for which he merits a special compliment.

The chapter "The Existential Approach" is written by Rollo May, a psychologist, who, in this reviewer's opinion, has an unfortunate love affair with the pertinent philosophy.

EUGEN KAHN, M.D.,
Houston, Tex.

CURRENT THERAPY, 1960. Edited by *Howard F. Conn, M.D.* (Philadelphia: W. B. Saunders, 1960, pp. 808. \$12.00.)

This is the 1960 edition of a well-known annual series which deals in a practical way with methods of treatment of a wide variety of diseases. In each case one of the contributors describes his own methods of treating this particular disease. Since there are over 300 contributors to this edition, there is a good deal of variation in the style and the approach to the subject. However, the contributors are generally of a high calibre, and in the majority of cases they present useful and up-to-date information on methods of treatment, the most effective drugs with details of their dosage and administration, toxic or side effects of the drugs, and the expected response of the patient. Since it is one man's method of treatment that is presented, there is usually no attempt made to discuss the pros and cons of all the current methods of treatment for a disease, but rather the ones that the contributor has found most effective in his own practice.

The section on psychotherapy is written by V. Gerard Ryan of Portland, Conn. It is intended to guide the general practitioner or internist in the treatment of patients with neuroses and psychosomatic illnesses. There is a brief discussion of psychotherapeutic techniques, drug therapy for symptomatic relief, and the selec-

tion of patients who should be referred to a psychiatrist for consultation or treatment. Obviously it is difficult to cover such a broad field in a few pages, but there is a good deal of practical information that should be helpful to most physicians.

The psychoses are considered under the headings of schizophrenia, mental depression, manic-depressive disease and delirium. Here is discussed the role of the general practitioner in the treatment of psychoses, the management of acutely disturbed patients. There is a brief outline of some of the current methods of treatment of mentally ill patients in hospital and drug therapy. Indications for electric shock therapy are covered.

Included in the appendices are a roster of drugs giving common trade names and dosage, a table of pediatric dosages, normal laboratory values, and poisonous substances in many household and commercial products. There is a good section on acute poisoning. Generally this is a very useful reference book for a physician in almost any branch of medicine.

A. D. McKELVEY, M.D.,
University of Toronto.

RESEARCH CONFERENCE ON THERAPEUTIC COMMUNITY. Compiled and edited by *Herman C. B. Denber*. (Springfield, Ill. : Charles C Thomas, 1960, pp. 265. \$11.00.)

This book is a series of 14 papers which were presented at a research conference held in the Manhattan State Hospital, March 13-15, 1959, under the chairmanship of Henry Brill. This same group had held a previous meeting in Montreal and the proceedings of that meeting are chronicled in *The Dynamics of Psychiatric Drug Therapy* (ed., G. J. Sarwer-Foner, Springfield, Illinois, Charles C Thomas).

A variety of aspects of the therapeutic community are covered in the various papers and if there is any central theme it may be the emphasis upon conversion of the milieu to a greater degree of "therapeuticity" than existed before. H. Brill in his opening remarks reviews the history of the therapeutic community under its various aliases, emphasizes that this is not something new and warns that humanitarian improvements are reversible.

Chittick, Brooks and Deane describe and discuss the 8-point Vermont State Hospital program, and the excellent results that ensued. At the completion of this program the discharge rate almost approximated the admission rate.

Irvin discusses modification of social behavior of animals through the use of drugs.

He concerns himself exclusively with sub-human social organizations where it has been demonstrated that drugs may alter competitiveness, cooperativeness, locomotor activity, aggressiveness, sexual behavior, apprehension and anxiety, imprinting, resistance and contagious behavior. All are factors relevant to the type of social organization that is operating. He prudently refrains from any sweeping generalizations as to how this information may have application to our concepts of human social organization although he suggests that this information is relevant.

Meszaros discusses principles of research in a therapeutic community setting and points out advantages and disadvantages. His primary contention seems to be that in those instances where the research process conflicts with the therapeutic goals, it must adapt its methods and objectives to become compatible with the treatment milieu.

Denber presents a paper which is primarily a documentation of the transformation of a state hospital ward of chronically ill female psychotics from a custodial to a therapeutic regime (over a 2 year period). His paper best exemplifies the important principles of the therapeutic community, although some of the other papers stressed some of these principles as well.

Denber pin-points and high-lights the following factors: 1. The crucial relationship between administration and staff, 2. The importance of staff attitude—especially their preparation for change and the value of their cooperation, 3. The importance of recognizing the dignity of the individual—both patient and personnel, 4. The need for mutual respect between the psychiatric disciplines and 5. The ever present conflict between custody and therapy.

Sarner-Foner, Ogle and Dancy document a similar effort at Ste. Anne's Hospital in Montreal. Their paper contains greater detail of the physical organization of the ward and in many respects repeats the principles discussed by Denber. This paper is particularly valuable for one who is planning his first conversion to a therapeutic regime. It contains much practical information.

Greenblatt and Levinson document the results of some of their open door experiments. This is covered from the viewpoint of each of the psychiatric disciplines involved—and the difficulties encountered before success was attained. They conclude, after two years of effort, that "the open door is a fait accompli. It is accepted. It is good." At the same time though they stress that "taking the United States as a whole, the overwhelming majority

of hospitals are not open at all." They conclude with "an open door without an open mind is bound to be a failure."

Roberts reports upon his experiences in implementing the therapeutic community by means of group meetings. In his opinion it has proven to be a valuable tool. He makes a sharp distinction between group meetings and group therapy. Gralnick emphasizes the relationship between psychiatrist, patient and family and stresses that "total" treatment involves participation of each member of this triad. Boad discusses the day hospital as a therapeutic community and points out the need for this specialized facility, its advantages and pitfalls.

Kwalwasser documents the development of an adolescent pavilion for girls at the Hillside Hospital, some of the difficulties encountered and how they were overcome. This unit, during its development, felt a need to be more closely identified with the total hospital but was thwarted in this aspiration. He concludes that "the higher the esprit de corps in the unit, the great stress and strain it can successfully and therapeutically absorb."

Klerman discusses factors and attitudes which are involved in the arrival at a decision to use drug therapy. He clearly brings out personal and social factors which seem to be relevant although some psychotherapists might take issue with some of his conclusions. "Staff attitude to a particular form of treatment and the choice of treatment for a particular patient might be the condensed expression of the interpersonal forces which surround the patient in the hospital milieu."

Bullard and Hoffman studied the factors which influenced the discharge of a group of chronic, schizophrenic patients. In those patients in whom discharge became a reality, they found that the significant factors were (a) good hospital adjustment, (b) psychotherapeutic relationship with a doctor or social worker, (c) satisfactory attitude of the patient's family and (d) availability of adequate community resources.

E. B. Kris discusses factors which facilitate and prolong patients' release from the hospital. She stresses (a) individualized attention and (b) the need to become self-supporting.

This book is a documentation of some of the, as yet, all too few attempts to convert to a therapeutic or open door regime. The majority of the papers agree to a remarkable extent about which factors are relevant. Almost all of the papers emphasize the importance of the social processes involved. The volume is written in a simple and factual manner and there

is a minimum of dynamic interpretation. Most of the reports are almost a narrative description and they will be invaluable to anyone contemplating the introduction of an open door policy.

PAUL E. FELDMAN, M.D.,
Topeka, Kansas.

LAW AND MEDICINE. By William J. Curran.
(Boston: Little, Brown & Co., 1960, pp. 829. \$12.50.)

The preface to this book commences, "This volume is presented as a text and casebook for practicing attorneys and students of law in those areas of medical science, medical practice, and public health which are most significant to law, our legal system, and the practice of law in the United States today."

In view of this statement, it might be thought that *Law and Medicine* would be of little interest to psychiatrists. The contents lead to a different conclusion. There is a long chapter, comprising 124 pages, devoted to psychiatry and law. The author states, "This is the only chapter in this volume devoted to a single aspect of medical science. There are so many areas of the law, in its theoretical foundations as well as its practical aspects, where psychiatry is vitally involved that it seemed to warrant such treatment."

The topic has been explored thoroughly, including such aspects as psychopathic personality, criminal responsibility, sex offenders, testamentary capacity and domestic relations.

Anyone who is interested in forensic psychiatry will profit by reading Professor Curran's book.

K. G. GRAY, M.D.,
University of Toronto.

HERITABLE DISORDERS OF CONNECTIVE TISSUE. 2nd Ed. By Victor A. McKusick. (St. Louis: C. V. Mosby Co., 1960, pp. 333.)

A welcome second edition of a most informative work on the clinical and genetic facts relating to the disorders of connective tissue. McKusick seems to have covered everything on the subject, and his bibliographies are invaluable. What is remarkable is the frequency with which these hereditary disorders involve a mental deficit. This is a matter which McKusick does not discuss. "The connective tissue disorders are readily understandable on the basis of a genetic defect involving mesodermal tissues, but in the cases with accompanying mental defect it is difficult to account for the condition. There may or may not be an ectodermal defect. Much more likely is the possi-

bility of an enzymatic defect. But this is conjecture and what is called for is investigation. The present volume performs the dual valuable functioning of providing all the available information relating to these disorders, and the direction in which further work requires to be done. That work, I suspect, will be largely biochemical in nature.

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PSYCHIATRIC SERVICES AND ARCHITECTURE. By A. Baker, R. L. Davies, and P. Svadon.^o (WHO Public Health Papers, No. 1, 1959, pp. 58, 60c.)

This paper is a follow-up on the 1952 report of the WHO Expert Committee on Mental Health which set out the principles which should govern the structure and functions of psychiatric hospitals. It was prepared by the Physician-Superintendents of two mental hospitals (one in Britain, one in France), and by the Director of the Division for Architectural Studies of the Nuffield Foundation. In drawing up the text these eminently competent men consulted "twenty-nine psychiatrists from thirteen countries and from architects from three countries." The resulting report follows the same general principles of previous reports advocating facilities for community care, small hospitals close to centres of population, etc. However, it is not old stuff. Its freshness is due to its style which is succinct, coherent and clear, while in content it presents a comprehensive statement on psychiatric services, with sufficient detail to clearly relate specific architectural arrangements to patient needs.

Since this report is brief considering its scope, since it is easy to read, and since it sounds eminently sensible, it should be read at first hand rather than through a reviewer, particularly since it is in contrast with much that is still being done in hospital planning and design.

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CLINICAL MANAGEMENT OF BEHAVIOR DISORDERS IN CHILDREN. 2ND ED. By Harry Bakwin and Ruth Morris Bakwin. (Philadelphia: W. B. Saunders Co., 1960, pp. 597.)

This admirable work has established itself as a standard work on the diagnosis and management of behavior disorders in children. Written with balance and clarity by a husband-and-wife team of pediatricians of long

and great experience it is a pleasure to welcome the second edition. The book is designed to appeal to a wide range of workers, psychiatrists, pediatricians, general practitioners, psychologists, social workers, and whoever else may in any way be concerned with understanding and treating healthy as well as problem children.

References following each chapter are judiciously chosen, and form a most valuable feature of the book, and there are excellent author and subject indices.

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THE CENTRAL NERVOUS SYSTEM AND BEHAVIOUR. Selected Translations from the Russian Medical Literature under the joint sponsorship of the Josiah Macy, Jr. Foundation and the National Science Foundation. (Bethesda, Md.: 1960.)

This volume of 1051 pages was prepared for distribution by the Russian Scientific Translation Program, National Institutes of Health, Bethesda, Md., primarily for distribution to medical libraries throughout the United States and Canada.

In his preface to the volume Frank Fremont-Smith, M.D., Director of the Josiah Macy, Jr. Foundation states that "the articles selected do not necessarily represent the best research conducted in Soviet laboratories, but were selected as being generally representative of some of the more recent Soviet research concerned with the understanding of human behaviour." Many of the articles are unlikely to be available to individuals who do not read the Russian Language.

C.B.F.

MENTAL DISEASE AMONG JEWS IN NEW YORK STATE. By Benjamin Malzberg, Ph.D. (New York: Intercontinental Medical Book Corporation, 1960, pp. 140. \$3.75.)

The search for etiological clues is one of the major functions of statistical analysis in medicine. This book presents the findings of Dr. Malzberg's investigations into the truth about the incidence of mental disorders among Jews: to those who have followed Dr. Malzberg's valuable contributions to our available knowledge on mental disorders, it will be of special interest.

This study presents statistics on the incidence of mental disease among Jews and white non-Jews in New York State and New York City, based on first admissions to all mental hospitals in New York State during the fiscal

years 1931-1941 inclusive. The distinctive pattern of Jewish experience in mental disorders—a higher relative and absolute incidence of the psychoneuroses and the functional psychoses, and a lower incidence of the organic psychoses—is noteworthy.

Eight groups of mental disorders in two categories, psychoses of organic origin and functional disorders, were studied. The organic group comprised 27.2% of total Jewish first admissions and the functional group 59.8%; the organic group comprised 42.9% of non-Jewish white first admissions, the functional group 40.8%. The observed crude first admission rates per 100,000 population for New York State are as follows:

Diagnosis Category	Jews	Non-Jews (white)
Psychosis with cerebral arteriosclerosis	17.1	20.6
Senile psychoses	8.0	12.6
General paresis	3.0	6.4
Alcoholic psychoses	0.6	8.3
Total organic group	28.7	47.9
Schizophrenic disorders	32.5	24.9
Manic depressive psychoses	12.9	7.9
Involuntional psychoses	9.4	7.1
Psychoneuroses	8.3	5.4
Total functional group	63.1	45.3
All mental disorders	105.6	111.1

As the author points out, while "there may be some dispute as to the validity of first admissions as a complete measure of the incidence of mental diseases . . . their superiority over any other measure now available cannot be denied. . . . We shall leave to the future, attempts to unravel the social and psychological factors that may be basic to the question of differences in mental disease between Jews and any other ethnic group. In the light of the evidence in this study, it must be concluded that the differences are not in the quantitative direction that has been implied in the past, but rather along qualitative lines that require further investigation."

This study is a lesson in the utilization of available mental health statistics. It provides valuable descriptive epidemiological information and should serve as a stimulus to others to pursue further work in this area.

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DELINQUENCY AND PARENTAL PATHOLOGY. By Robert S. Andry. (London: Methuen & Co. Ltd., 1960, pp. 170. \$3.00.)

The author of this book has set up an experimental design directed towards examining

the emotional triangle between child, mother and father.

The basic technic utilised is an interview-questionnaire. The author sets up a series of hypotheses concerning child-parent relationships and attitudes. These hypotheses are tested by analysing the data obtained through the interview-questionnaire.

The experimental group consisted of 80 boys adjudged to be delinquent and the control group of 80 non-delinquents carefully matched, as regards recognised variables, with the experimental group. The technic aimed at not only obtaining data as the child sees the parent role, but also assessing how each parent sees the role he or she plays with the child.

The analysis of the data substantiates the importance of maternal deprivation as an etiological factor in social mal-adjustment. It also clearly indicates that the paternal role is of equal or greater importance as an etiological agent in delinquency.

Dr. Andry has made use of an interesting method of gathering data, concerning parent and child attitudes towards each other. In my opinion this is an important contribution in understanding delinquency, and it indicates the need to carefully study both the child's perception and the parents' perception of their individual roles.

The author provides an appendix to his work titled "A Review of the Literature," which refers briefly to many of the major works of research related to juvenile delinquency. It is, however, far from complete and contributes only in a limited fashion to the usefulness of this book.

The book may be considered as a useful description of a research method and a helpful analysis of certain data related to parental and child attitudes. In my opinion the book would be primarily useful for those engaged in research related to Juvenile Delinquency.

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REFLEXES TO INTELLIGENCE. By Samuel J. Beck and Herman B. Molish. (Glencoe, Ill.: Free Press, pp. 669, 1960. \$8.50.)

Here two experienced clinical psychologists have assembled no less than 73 selections from the literature of clinical psychology illustrating the evolution of this large and growing field. But this is far more than just another reader. Each chapter is preceded by an introduction, commenting upon the significance of the authors and their viewpoints, and followed by a list of auxiliary readings, many of these accompanied with a brief comment.

Pointing out that the "first man was very likely the first psychologist," the authors devote Section 1 to Clinical Wisdom in Former Times (Homer, the Bible, Shakespeare). Sources and Foundations (Sec. 2) reproduces articles by Darwin, Titchener, Sherrington, James and Dewey, among others. In The Quest for the Whole Person (Sec. 3) we find Freud, Jung, Adler, Sullivan and Cobb. Section 4, The Measure of the Mind, deals especially with psychometrics—Binet, Terman, Wells, Wechsler, and Lightner Witmer (whom he credits with probably having originated the term "clinical psychology").

Disciplines in Interaction (Sec. 5) records the "maturation of clinical psychology"—the cross fertilization of social work, psychology and psychiatry. Due credit is given to Healy as one of the fathers of clinical psychology and to the late Lawson Lowrey, to whom the book is dedicated. Some others quoted in this chapter are Kasanin, Grinker, Kretschmer, Sheldon and Doll.

Next comes a Section (No. 6) on Humans in their Social Context, with selections by Wells, Woodworth and Beck. In the latter selection the author emphasizes the relations of clinical psychology, based on science and humanism, to the demands of other disciplines, especially the social ones. The entire selection is most thoughtful and illuminating.

Finally, in a Section (No. 7) entitled Today's Theorists—Tomorrow's Realists? we find articles by such authors as Burt, Lewin, Rapaport, Rogers, Rorschach and v. Bertalanffy.

The reviewer is tempted to cite many quotations from the introductions to the various sections as well as from the selections themselves, but space hardly permits.

A final quotation from the authors' introduction to the concluding section must suffice: "So from Darwin to von Bertalanffy we have reached full circle—In between these two writers—are the samplings from numerous others in the intervening 100 years.—They embrace that range which Spinoza envisioned of man in his smallness and in his potential greatness." (p. 511)

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ATLAS OF NEUROSURGICAL TECHNIQUES. By James L. Poppen, M.D. (Philadelphia and London: W. B. Saunders, pp. 522, ill., 1960. \$28.00.)

The purpose of this Atlas is to illustrate and describe in orderly sequence the techniques of neurosurgical procedures. The drawings, done by several artists, are excellent, and accurately focus the factors that the author considers important and to which he draws attention with a few short statements. In general when the Atlas is opened, the right hand page is filled with several drawings, with the essential anatomical and pathological structures clearly labelled. On the opposite page a few short sentences refer in some further detail to the drawings. In this way the orderly and planned steps of all the neurosurgical procedures that this reviewer can think of have been covered.

When referring to some particular problem with which the reviewer is familiar and has had some experience it is disappointing to find little said about the technical difficulties, and complications. It is these things that develop over the years that makes surgical wisdom and judgement so difficult to pass on and to put in writing.

The Atlas will be of great value to all neurosurgeons. Variations from the reader's personal technique can be quickly and easily appreciated. Even the very experienced neurosurgeon will pick up valuable points, knowing full well that the author has been through the mill and has had a vast experience in the encyclopedic range of neurosurgical procedures covered in this superbly illustrated Atlas.

In 1922, the reviewer first saw Doctor Lahey operate. The general impression was one of perfection in all operating room details. The personnel functioned at its best individually and as a team and all were under the certain direction of a great master general surgeon. Much of this rubbed off on one of his favorite pupils, Jim Poppen, constituting a base on which to develop his own superb technique and the ability and knowledge to enable him to publish this very excellent and valuable *Atlas of Neurosurgical Techniques*. It is a pleasure and a thrill to review a book when one has known and admired the author for a great many years.

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PROCESSES OF "SPONTANEOUS" RECOVERY FROM
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INTRODUCTION

Experiences useful in learning new behavior may occur with or without other persons. If they occur with other persons, these may or may not be formal psychotherapists. When patients recover by themselves or with the help of persons other than trained psychotherapists we consider their recoveries "spontaneous."

Reports of instances of spontaneous recoveries from the psychoneuroses have appeared from time to time in the literature of psychiatry and psychoanalysis (1, 2). References to the subject in psychoanalytic writings sometimes leave the impression that such recoveries occur rarely and that when they do, the recoveries are usually insubstantial or transient (3). Recently several independent studies of untreated patients with psychoneurosis have shown that between 40 and 60% of such patients recover within a few years of the first observations of their conditions (4, 5, 6, 7). In these studies, the investigators applied criteria of recovery used for patients who have received psychotherapy and this leaves no grounds for supposing that the spontaneous recoveries were spurious or any less stable than those brought about by treatment. Apparently the patients who recovered spontaneously had experiences in their life situations which permitted them to unlearn maladaptive behavior and learn new, more adaptive behavior.

Several therapists have reported series of patients treated by methods which make deliberate use of the patient's opportunities for learning with persons other than the therapist (8, 9, 10). The results with these methods seem fully as good as those with psychotherapies that emphasize the patient's

experiences with the therapist. Moreover, the results were achieved in a much smaller number of therapeutic hours, presumably because "practice" between therapeutic sessions reduced the time needed for instruction just as it does in learning to dance, ski, or speak a foreign language. We cannot make final judgments of the merits of different therapies without careful comparisons of matched groups of patients treated by different methods. The comparisons mentioned, however, justify careful studies of the processes of spontaneous recovery. From investigations of such recoveries we may learn new ways of facilitating recovery from the psychoneuroses in those patients who come to us for treatment.

For some years I have collected accounts of spontaneous recovery from mental illnesses or improvements in them. I have gathered these from a number of places, including patients, friends, and various published sources.³

In considering changes brought by life experiences, I refer to changes in habitual behavior and attitudes, and not to changes only in feeling states. Thus the pleasant glow which might follow hearing that one had inherited a fortune is a change of feeling, not of values nor of behavioral responses; I believe that a person changes his personality only when the inheritance of a fortune comes to mean less (or more) to him than it did previously, *i.e.*, when the same outward event produces in him a different response.

In making the distinction between changes in feelings only and in behavioral responses, I do not mean to say that a favorable turn in the patient's life situation can only bring a change in feelings. Many of the cases I have collected show the value of changes

¹ Read at the 116th annual meeting of the American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

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³ I am grateful to Drs. Jacob Weisler and S. A. Steiner for permission to mention cases observed by them and to Dr. Joseph Wolpe for helpful suggestions about the organization of case material and interpretations of the cases.

in a patient's life which provide him with opportunities for learning new behavioral responses. For example, Abraham reported a complete reform in a man who had been all his life a cheat and impostor. The transformation of this patient occurred after his marriage to an elderly widow who satisfied his needs for affection and attention which he had previously only gained by dishonesty(1). Nor do I mean to devalue the importance of changes in feelings as helpful to recovery, but by themselves such changes in feelings make unreliable indicators of improved resistance to life stresses.

Important changes in life situations often occur to patients undergoing psychotherapy. The psychotherapist then has an excellent chance to observe any subsequent changes in the patient's behavior. The ongoing psychotherapy may sometimes make difficult the separation of effects on the patient's behavior derived from the psychotherapy and the effects derived from an apparently important life experience outside therapy. Among my examples I have included a few from patients in psychotherapy, but only when it seemed clear to me that a marked change in the patient's behavior began after some important experience outside the therapy, which experience the patient himself or persons around him had initiated.

I have grouped the examples below under headings which I consider convenient and not necessarily explanatory. Certainly overlapping occurs and other interpretations may prove more valuable than those I have suggested. The examples have in common a marked change in the patient's behavior brought about through his own activity or through experiences in his life outside psychotherapy, although not necessarily independent of it.

EXAMPLES

Desensitization through Recall, Verbalization, and Assimilation of Past Painful Experiences. Many experiences gain and lose their meaning for us by being brought into association with other significant experiences. An event evokes anxiety by reminding us, not necessarily consciously, of earlier threatening events. But it may cease to make us anxious when we bring it into

association with new or old experiences which have other non-anxious qualities. The processes of retroactive interference and assimilation, as Bartlett(11) called them, go on continually. They may proceed with little or no external aid, both consciously and unconsciously(12).

John Stuart Mill described in his autobiography(13) a severe depression from which he suffered when a young man. The depression occurred when Mill realized that his zeal for reform concealed his own interest in himself behind a pretense at improving the lives of others. Guilt, apathy and inertia followed this insight. Mill attributed his eventual recovery after 2 years of illness to the reading of Wordsworth's poetry. He thought that the poems benefited him, first, by evoking in his mind memories of the happy country scenes of his childhood, and secondly, by arousing once again strong emotions which in his depression he had ceased to feel.

Fechner, the great 19th century physicist, psychologist, and philosopher, suffered from a severe depression with hypochondriasis from which he recovered at the end of 3 years of almost total disability. His pupil Wundt attributed Fechner's recovery to autosuggestion(14). The affirmations given in suggestions whether provided for the patient or by himself, constitute new images (or the revival of old ones) that neutralize the effect of the dominant pathogenic images. For this reason I have placed Fechner's recovery in the group with Mill's and the examples which follow.

The processes by which one event, in the present context a painful one, is brought into association with others which are less painful or less injurious to self-esteem, take place more quickly if the sufferer expresses the painful events in words to other sympathetic persons. Sophocles(15) knew this, and so did Shakespeare(16) and Tennyson(17). The relief experienced after confiding one's distress in others has made this an almost universal mode of effective psychotherapy.

Janet, Breuer, and Freud discovered that much relief can occur when the patient recalls and verbalizes not only experiences which he remembers but also those he has forgotten or repressed. Psychopathologists

still dispute whether such de-repression is a requirement of recovery from a psychoneurosis as Freud claimed. All agree, however, that this process often has value in facilitating recovery. It may occur outside psychotherapy as the following example shows.

A 44-year-old woman (not a patient) told me the following story. From early childhood she had repeated nightmares in which she was frantically looking for someone and was extremely frightened at not having found this person. After her marriage in her early thirties, these continuing nightmares kept her husband from sleeping. He finally asked her what she was dreaming. Upon hearing her description of them, he asked her if she had in fact ever been lost. My friend thereupon remembered that when she was 5 years old she had been lost in the bolt goods section of a department store. Being then small, she walked back and forth in the aisles, hidden by the bolts and herself unable to see above them. Eventually she was found. The nightmares began after this episode. After my friend recovered this memory, the nightmares abruptly ceased and had never returned in the 10 years following. No strong emotion accompanied the recall of the childhood experience, and the recall did not seem at the time particularly important. My friend did not expect that it would influence the occurrence of the nightmares and later noted with surprise that they had ceased. The sympathetic interest of her husband may have contributed to the cessation of the nightmares, because my friend not only recalled the episode of being lost, but told it to him.

Desensitization through Association of Experiences which have Aroused Anxiety with New Pleasurable Experiences. An anxiety-arousing (so-called traumatic) experience may be brought into association with new experiences as well as with old experiences remembered and sometimes verbalized. If the patient becomes able to associate the traumatic experience with some new experience which gives pleasure or satisfaction, the previously painful situation loses its capacity to stimulate anxiety. An awareness of not having fled, i.e., of having "mastered" a stimulus for anxiety may accomplish this as the following case suggests whom I treated with psychoanalysis for several years.

A male medical student who had a great many symptoms of anxiety which a wide variety of

situations stimulated was especially prone to anxiety when on display in front of groups of other people. Thus as a medical student he loathed to present his cases on ward rounds and went to great lengths to avoid this. By various means he was able, while a student, to escape from nearly all such situations. For example, when his turn came to present a case, he would absent himself or persuade another student to present his case for him. Although he made much progress during psychotherapy with other symptoms, he made none whatever in this matter.

As the time for his graduation approached, he dreaded the prospect of internship in which situation he knew he would be less able to avoid the situations he feared. In June, he learned to his horror that he had been assigned first to ambulance duty. The prospect of having to go to the scenes of accidents and there administer treatment to injured persons with a large crowd gathered around filled him with severe anxiety. He tried unsuccessfully to persuade a secretary to alter the assignments so that he would not have to take ambulance calls until later, or never. As July approached, his anxiety became greater and greater. But when the first day of internship actually arrived, he decided he had no alternative but to make the best of the situation, come what might. On his first ambulance call he had so much anxiety that he took large amounts of sedatives which he had prescribed for himself. Everything went well, however, and he felt less anxious when the next ambulance trip came up. At each occasion his anxiety became less and he correspondingly reduced his sedation. Within 10 days he had dispensed entirely with sedatives and felt quite comfortable on ambulance calls. Apparently from each of the first ambulance calls he derived a sense of accomplishment which he feared he could not achieve. The recollection of his "successes" made him increasingly confident and, correspondingly, decreasingly anxious as his experience increased.

Herzberg(8) exploited this feature of learning in assigning to his patients series of tasks of graded severity. The accomplishment of each task provided the patient with a sense of accomplishment or mastery which made easier his undertaking and accomplishing the next task. Wolfe(9) has also shown that the gradual but persistent association of pleasurable responses (e.g., sexual pleasure) with situations formerly evoking anxiety will eventually reduce and

abolish the capacity of these situations to evoke anxiety.

Any strongly pleasurable activity or any response which contributes to the reservoirs of self-esteem in a person will tend to neutralize a "painful" experience and thereby reduce or abolish its capacity to evoke anxiety. The following case illustrates this principle.

A man who suffered from a severe claustrophobia determined to overcome this fear and did so in the following manner. He deliberately exposed himself to situations evoking his phobic reaction, e.g., trains, street cars, and elevators. Then he "confessed" his disability to a number of friends singly and in groups. He found relief in learning that many of them had similar fears, and in the acceptance of him by others who had not. This reduced the shame he had felt with regard to his phobia and so increased his self-esteem and confidence. When he felt some initial reduction in his fears of confinement, he began a program of riding on street cars while reading which he had always enjoyed. Gradually he established an association between the pleasurable activity of reading and riding on street cars. This program led to a steady abatement of his anxiety which had completely disappeared within a year of his starting his treatment of himself. He had had no recurrence of anxiety in the 3 years following this before he made his report (18).

Increased Supplies of Respect, Reassurance and Affection from Other Persons. Good fortune may come in the form of new persons and new experiences from which a patient may learn new responses. Boverman has reported in some detail the influence of a kindly ward attendant in facilitating an ostensibly "spontaneous" recovery in a psychotic patient (19). Wolberg has reported another example of the same kind of influence by an attendant (2).

A young student was raised by an ill-tempered and shrewish mother, whose behavior so alienated the patient from women that he considered himself at the time of entering therapy doomed to homosexuality. He had almost no social relationships with girls and they had never got beyond the slightest physical contact. He seemed to select girls who were as inhibited sexually as himself. Not long after he began treatment he moved from one boarding house to another. Soon afterwards, an attractive girl

moved into the next room of the boarding house. They became acquainted and the friendship grew. They discovered that when they unlocked the connecting door between their rooms they could be together more often. The girl was outgoing and warmly affectionate. She was also experienced in the ways of sex and almost before the patient knew it, she had enticed him (or seduced him) so that he was soon enjoying sexual intercourse while entirely forgetting his fears of being a homosexual. They were eventually married.

In this case, a girl sufficiently different from the patient's mother and previous girls he had known provided pleasures sufficiently great to overcome his sexual inhibitions. By taking the initiative herself, she had largely compensated for his passivity. The mastery of his fears of sexuality brought the patient increased confidence which enabled him to handle better other sources of his anxiety.

The marked difference in capacity for affection between his girl friend and his mother may additionally have helped the patient to correct faulty generalizations about women which he had carried over from his experiences with his mother. Kolb and Montgomery (20) have reported an instance in which a patient's apparently spontaneous improvement coincided with his correcting his misperception of his therapist through having a different, more friendly, less formal exchange with him outside the standard therapeutic period.

The awareness of affection, aid, confidence, and other factors usually described under the heading of "support" often seems to permit human beings to face anxiety-provoking situations which they would otherwise avoid. Wolpe (9) has described the overcoming by his small son of a fear of jumping from a 3-foot wall. The fear came on after the boy fell from the wall once, and it continued until his father persuaded him to jump first while he held his hand and then merely looked on without holding the boy's hand. After a dozen jumps the boy jumped from the wall fearlessly even if his father were not present.

Situations of this kind often include several ingredients. In this case, the boy may have jumped again to please his father, also because his father held his hand. The desire

to preserve the affection and respect of new (or old) friends and acquaintances may account for some instances of recovery which are referred to in the literature of psychoanalysis as "transference cures." As children often attempt unpleasant tasks in order to please their parents, patients may undertake new behavioral responses to please other persons who may or may not be psychotherapists. These new responses may then bring additional gratifications which serve to reinforce the new behavior after the original stimulating relationship has ceased.

The cases of this group may resemble those of the last group in the process of improvement. The friendly, supportive person may provide a new stimulus of pleasure with which the previous anxiety-producing stimuli become associated as a result of which the latter lose their capacity to arouse anxiety. I have, however, grouped them separately because of the possibility that the supportive person by his interest in the patient exerts a generally beneficial influence through altering the patient's "self-concept." As the patient then begins to entertain different thoughts about himself he becomes less sensitive to previously stressful events and better able to encounter them adaptively.

Something of this kind seems to have occurred in the case of a depressed soldier during the Crimean War.

The soldier had participated in the charge of the Light Brigade at the battle of Balaclava. Subsequently he had become depressed and this, the camp physician believed, prevented his recovering from the effects of an injury he later received. An attempt to discuss with the apathetic soldier the charge in which he had participated elicited only monosyllabic replies. Tennyson's poem on the charge was then read to him and immediately kindled an animated response. The patient "entered upon a spirited description of the fatal gallop between the guns' mouths to and from that cannon crowded height." Within a few days the patient had entirely recovered and was discharged from the hospital. The camp physician attributed his recovery to the effects of hearing Tennyson's poem (21).

More than two-thirds of the soldiers in this charge were killed. The survivors

seemed to have experienced afterwards a state of shock to which several factors must have contributed. The experience seems to have had for the survivors a traumatic effect not only in the physical sense but also psychologically (22). Guilt over the failure of the charge and the deaths of comrades entered into this. Tennyson's poem diminished emphasis on the folly and failure of the charge and placed it on the discipline and heroism of those who participated. Thus the reading of the poem to the depressed soldier may have altered radically his view of himself in relation to the charge and thereby restored his self-esteem.

New Models of Behavior. Although men have known for centuries that children learn to speak through imitating adults, psychopathologists have only recently begun to emphasize the learning through imitation of other kinds of behavior, including abnormal behavior (23, 24, 25). Deprived of adequate models children may not learn what their more fortunate contemporaries learn; but they may still catch up. Thus, in a long-term follow-up study of untreated shy and introverted children, Morris, *et al.* (26) found that the majority had "recovered" by or in adulthood and were leading normal lives. Many had lost their shyness and had become outgoing, apparently as a consequence of having married more gregarious wives.

A patient of mine had lost her mother when she was 13. She had fallen under the rather tyrannical dominance of her father and had afterwards lacked close contact with mature women. As a consequence, she became stunted in the development of feminine qualities and failed in her early relations with men. At 29 she had not married and sought therapy. Two years of treatment prepared her for an opportunity which occurred outside the therapy. She joined the social club of a church and there found new models for feminine behavior among persons of her own age. A marked acceleration of her feminine development followed her joining this club and within a few months she was dating eligible men regularly. Shortly after this, she selected one as superior to the others, became engaged to him, and some months later married him. His mother proved an unusually kindly and sensitive person to whom the patient became warmly attached before and after her marriage. The pa-

tient's mother-in-law seemed to assist further the patient's feminine development by acting as another, if delayed, substitute for the patient's mother.

New Situations Requiring Different Responses. The loss of supportive persons through death, defection, or other kinds of separation, seems often to contribute to recovery from the psychoneuroses. Many persons have experienced a marked acceleration in their own maturation with the death of a parent which obliged them to live differently and more responsibly. The death of Freud's father seems to have freed him from certain inhibitions affecting his work (27). Other, lesser separations such as going away to school, college, work, or the armed services, have facilitated maturation by requiring new and more independent behavior. Usually the changes so wrought occur gradually; sometimes turning points seem clear, as in the following example.

A medical student I treated had strong feelings of inferiority with severe anxiety regarding his capacity to perform medical procedures. He believed himself hopelessly lacking in the necessary manual skills. Between his third and fourth years he took an externship at a distant hospital and I did not see him for several months. When we met again he showed much less anxiety and exuded such unusual confidence that I questioned him carefully about what had happened. He said that the hospital had a very small staff and the administrators had given the externs responsibilities far beyond those their training called for. Although initially frightened, the patient had undertaken all his assignments including the management of some serious emergencies. He especially recalled one occasion when a patient began to bleed profusely from an operative wound. In the absence of anyone more competent the extern was called to stop the bleeding. Upon first hearing of the hemorrhage he wanted to flee. Nevertheless, he had gone to the patient and eventually arrested the bleeding. This and other similar experiences, he thought, had greatly reduced his anxiety and increased his confidence.

Sometimes exasperation or changed circumstances modify the attitudes of those around a patient so that they come to expect or even demand a different kind of behavior from the patient. Two rather dif-

ferent examples of this have occurred in my collection of these cases. "

A friend told me that in the early years of his marriage when he and his wife quarreled, she would completely abandon the housekeeping and would stop preparing meals, making beds, and washing laundry. All this inconvenienced him greatly and he tried with many arguments to make her see that she should not neglect her responsibilities when angry since he continued to discharge his. As his persuasive efforts failed, he finally became sufficiently annoyed to tell her that the next time she shut down her housekeeping, he would cut off her access to funds in their checking account at the bank. His wife now protested in her turn about this unfairness, as she believed it to be. Nevertheless, this threat became a turning point in her behavior. With occasional mild relapses, she thereafter kept up her housekeeping even when angry with him. Her husband, on his side, finally realized that her neglect of housekeeping was, among other things, a protest at his failure to help her with its more burdensome aspects. He began to assist her more so that housekeeping became less of a chore for her. This couple thus achieved a kind of *therapie à deux*.

A different kind of expectation occurred in the case of the son of one of my patients, who told me the following story.

At the age of 22, the son experienced a severe depressive reaction, which seems to have been precipitated by the induction of his brother into the armed services during the second world war. He, himself, had wanted very much to go into the armed services but could not do so because he was assigned to essential work in an aircraft factory. He became preoccupied by thoughts of inadequacy and inferiority in relation to his brother, and these developed into a severe depression. Following the onset of the illness, he spent about 3 of the next 6 months in a hospital receiving psychiatric treatment. The rest of the time he received treatment as an outpatient. At the end of 6 months, however, his condition had not improved; he continued quite depressed and withdrawn. At this time his father decided to bring him home, apparently with the concurrence of the patient's psychiatrist. The son returned home and his father intended to give him a position in his flour mill. He had realized that his son could not, in his mental condition, handle a responsible job and so had planned to give him some relatively minor position, al-

most a sinecure. The son had been home only a few days when his father took him on an automobile trip to attend to some business matter. The son, still very depressed, had apparently gone along only for the ride with his father. On the trip an accident occurred which rather severely injured the father's right hand. He was also knocked unconscious for a brief time, but the son was not injured at all. The disability of the patient's father obliged him to ask the patient to do various things for him which he had not intended to assign to him. Among other things he had to ask his son to sign checks and letters since he could not use his right hand. Within a few days the patient's depression began to lift and cleared entirely shortly afterwards. The son took up eagerly the responsibilities put on him by his father.

The father, in telling me the story, said that in his opinion his son's recovery was due to his getting a sense of being needed by his father when the father became injured. Previously, the son had been given a job more or less out of charity by the father. After the father's accident the father needed the son to help him because he could not do various things himself with his disabled hand. The son responded to this need which counteracted his sense of being useless when his brother had gone into the armed forces. No relapse had occurred in the 15 years following this recovery.

Wolberg briefly reported a similar instance of spontaneous recovery when a patient was asked to care for other patients with a consequent rise in her self-esteem (2).

Shifts in Motivations Brought About by Fear, Shame, or Desperation. Sometimes a progressively destructive course of behavior may be arrested by some event which shocks the patient into an awareness of the harm he does to himself and others.

A woman who had been drinking alcohol excessively for at least 6 years required a gall-bladder operation. Her husband, who was a physician, conspired with the surgeon to inform the patient after the operation that the surgeon had discovered in her liver the signs of early cirrhosis. The fear aroused by this fiction shocked the patient into complete abstinence which continued for the following 7 years, that is, to the time I heard the account.

Another alcoholic patient fractured his leg during a brawl when drunk. The leg healed slowly and kept him disabled for almost a year.

He thereafter remained a teetotaler for at least 10 years during which time he was followed by his physician.

A patient developed a phobia of buses so that he was obliged to walk to work. This phobia had arisen through a chain of associations from anxiety stimulated by the patient's wife. The patient did not tell his wife that he had become afraid of buses because he greatly feared her derisive laughter. He gradually became less afraid of his wife and more assertive with her, but persisted in his fear of buses. One day he was in the shopping district of his city with his wife when it was most convenient for them to return home on a bus. Rather than expose his phobia to his wife, the patient got into the bus with her and went home. Thereafter his fear of buses rapidly diminished and soon disappeared altogether.

CONCLUSIONS

The foregoing examples by no means exhaust the possibilities with regard to spontaneous recovery from the psychoneuroses. They may suffice, however, to show the existence of many opportunities for patients to have experiences apart from psychotherapy which can stimulate or facilitate new behavioral responses necessary for recovery.

Two implications from the study of such cases emerge. First, any satisfactory theory of the processes which enter into the origin of psychoneuroses and recovery from them must be capable of accounting for instances of spontaneous recovery. For example, it can no longer be maintained that de-repression of past painful experiences is a requirement of recovery, although this may under certain circumstances contribute to it. Nor can spontaneous recoveries be generally attributed only to the operations of suggestions from other persons, an interpretation which seems often to be implied in the use of the concept of "transference cure."

Secondly, these cases seem to establish further the value of life situations outside the therapist's office for experiences valuable in unlearning maladaptive behavior and learning new behavioral responses. This value justifies a careful study of them by therapists and encouragement by them of their appropriate exploitation as a means of accelerating recoveries from the psychoneuroses.

SUMMARY

1. Several independent studies of untreated psychoneurotic patients have shown that between 40 and 60% of such patients recover within a few years of the first observations of their conditions. Treated and untreated patients probably recover through the same processes which include and require the learning of new behavioral responses. We have some evidence that treatment which emphasizes the practice by the patient of new behavioral responses in periods between his therapeutic sessions will shorten the number of interviews required and possibly the total duration of the illness.

2. Examples are given from some 20 cases of spontaneous improvements or recoveries derived from observations or reports of patients, experiences of other persons, or published accounts of such recoveries.

3. The following circumstances or processes seem to facilitate recovery from psychoneuroses: (a) desensitization through recall, verbalization and assimilation of past painful experiences; (b) desensitization through association of painful experiences with new pleasurable experiences; (c) increased supplies of respect, reassurance, and affection; (d) entry into the patient's life of new models of behavior; (e) occurrence in the patient's life of new situations requiring different behavioral responses; (f) shifts in motivation brought about by fear, shame, or desperation.

4. Further study of so-called spontaneous recoveries from mental illnesses may teach us much more about experiences which prove valuable to patients. From this we may learn more about what we need to do to assist patients to recover more rapidly than they would without psychotherapy.

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CERTAIN SOCIOCULTURAL AND ECONOMIC FACTORS INFLUENCING UTILIZATION OF STATE INSTITUTIONAL FACILITIES IN INDIANA¹

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INTRODUCTION

This study is preliminary to a long-range investigative program concerning the following hypotheses: The process of identifying an individual as a psychiatric patient requiring institutional care is a function of social, cultural and economic factors in his environment. An individual from a culturally sophisticated and socioeconomically stable environment will be identified as a "patient" more probably because of inner distress and its socially eccentric manifestations. One from a less sophisticated milieu at the opposite socioeconomic extreme will be identified as a "patient" more probably because of behavior aggressively directed toward his environment. Another more familiar way of stating this hypothesis is that the environmental tolerance for and interpretation of individual behavior is closely correlated with those factors which influence or determine attitudes toward mental and emotional disturbance.

The State of Indiana is favorable for testing such hypotheses. The range of relevant social, cultural and economic variables is broad. In order to lay the groundwork for testing these and related propositions, a systematic description of Indiana's counties was developed. In the present report, certain county characteristics will be described as well as the patterns of their relationships within the state. It is the secondary purpose of this study to report certain relationships between these factors and annual admission rates to the state mental institutions:

Albee(1) has recently reviewed data for the United States at large which reveal no significant correlation between average first admission rates to state institutions and the

urbanization rankings of the states involved. His extremes include the 10 most highly and least highly urbanized states in the U. S. A. This national study points up a clear and direct correlation between state urbanization and *per capita* income on the one hand, and median years of schooling completed on the other. Locke and associates(11) conducted a study, not only of average annual first admission rates for all diagnostic categories, but also for those diagnosed as schizophrenic. This study of the Ohio State hospital system was for a recent 4½ year span. Data were analyzed along 2 major dimensions: metropolitan-nonmetropolitan, and high-low rates of hospital usage. These axes are partially reflected in the zonal analyses of state hospital admission rates. Carstairs and Brown(2) studied differential utilization of community psychiatric facilities shared equally by 2 contiguous regions in Wales, one a population-dense mining community, and the other a rural-agricultural community. The advantage of studying the impact of social and economic variables in instances where the available resources for psychiatric care are equally shared by differing regions is obvious. The relative isolation and legal provisions for admission within several state institution zones in Indiana made possible such a limited analysis with the present data.

There appears to be an inverse relationship between the number and range of pertinent descriptive variables selected and the cogency of meaningful inferences to be drawn concerning their selective contribution to institutional usage. Clausen(3) has emphasized that the number of significant, or near-significant, correlations between social, economic, educational and other local variables with hospital admission rates is very great indeed, but that our understanding of psychiatric disorders at this level is little enhanced by such data. He has stated

¹ Read at the 116th annual meeting of the American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

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that it is not currently possible to specify clearly the relationship of prevalence of psychotic disturbances with any specific aspect of the environment along such social dimensions. He also expresses the opinion that the *interpretations* of statistical correlations are often made on a *post hoc* basis and yet presented as virtually self-evident. It is generally held that conclusions concerning the social determinants of serious emotional disorders can rarely, if ever, be drawn on the basis of any type of admission rate statistic. Such a tendency often intrudes in the most critically reported studies (13, 11, 2), but it militates against the objective interpretation of social factors. On another level, there is strong temptation for the worker in this area to infer generalization for one or another social or cultural determinant of disturbed behavior, while he stresses, paradoxically, the specifying conditions for its expression. The present study supports the conclusion that a relatively unique environment is required for the optimal expression of the social, cultural, or economic factors selected as variables influencing institutional usage or availability.

MATERIAL AND METHODS

The bulk of information used to categorize the various counties was derived from "Statistical Abstract of Indiana Counties" published by the Indiana State Chamber of Commerce, June, 1954. The following specific variables collected there were from the 1950 U. S. Census of Population: population density, percent urban population, occupation of employed workers, and school enrollment percentages by age groups. Information on average wage, which was incorporated in the economic index for each county, was obtained from official information releases published by the Indiana Department of State Revenue as of 1949. Data on farm operators, farm acreage and value, also included in economic index calculations, were obtained from the United States Census of Agriculture, 1950 (Counties and State economic areas, Indiana). Change in acreage value of farm property during the period 1950-1954 is reported in the 1954 Census of Agriculture of the U. S. Department of Commerce, Bureau of the Census, Washington (1956). Data on population

mobility in the period 1950 to 1956 were calculated from the Indiana State Board of Health, Division of Statistical Research, 1956, Population Release No. 3 (March 1, 1957). All calculated estimates of change were corrected for natural causes, that is, births minus deaths, for each county. The 1956 estimate of population from the same source was used as the population base for calculating annual admission rates for the period 1956-1957 and 1957-1958, while similar data from the 1958 population release were used as the base for calculating annual admission rates during the year 1958-1959. All data on admissions to Indiana state institutions were obtained from the Office of Statistical Research, the Indiana Division of Mental Health for each of the 3 years from June 30, 1956, to June 30, 1959. The annual admission rates referred to in this study include all admissions except for transfers between institutions. A certain percentage, therefore, represents readmissions during or between annual periods.

The selection of the school enrollment factor deserves special comment. In certain studies which survey social factors, the conventional statistic is median school years completed by persons 25 years of age or older. There are certain major limitations implicit in this statistic. The distribution is not sufficiently specified, and perhaps more importantly, the age of completion of schooling is neither indicated nor inferred. In clinical evaluation and prognosis, a much more useful indicator in our experience has been the school-enrollment status at age 16 to 17 years. Indiana state law requires all residents to continue formal schooling to the age of 16. County enrollment percentages show widest variations in this age interval. Moreover, since Indiana has many small colleges and at least 3 major universities, this variable successfully isolates artificial and discontinuous increments in school enrollment reflected in the age group 18 years and above. Actual percentage still enrolled in school in the age range 16 to 17 varied from 22.8% to 93.3% in the extremes counties.

The economic index calculated for each county was derived from 5 separate occupational, income, and farm value categories. The occupational categories included a high and a low status group. The high status

group was composed of professional, special technical, nonfarm managerial, and proprietor personnel. In the state at large, approximately 15% of all employed personnel, 14 years of age or older, were in this group (Group I); Group III included all those 14 years of age or older employed in domestic or other services, unpaid farm laborers, employed farm laborers, and other types of day laborers. In the state at large, approximately 20% of all employed were engaged in these occupational activities. The formula for calculating the economic index is as follows:

$$\begin{aligned} \text{Economic index} = & \frac{1}{\frac{I (\text{Total number}) \times 6.5}{\text{Total employed}}} + \frac{III (\text{Total number}) \times 5}{\text{Total employed}} \\ & + \frac{3000}{\text{Average wage}} + \frac{(\text{Total Farm Owners} + \text{Part Owners}) \times 10}{\text{Average value of land and buildings/farm}} \\ & + \frac{1.43}{\frac{\text{Average value farm land and buildings/acre (1954)}}{\text{Average value farm land and buildings/acre (1950)}}} \end{aligned}$$

The value 1.43 is the ratio of average values for farm land and buildings per acre for the state as a whole and for the years indicated.

Inspection of each component in this 5 factor sum reveals the single process of derivation. Thus, for the factor involving occupational Group I employed, that county which has the same proportion employed in this group as in the state as a whole, receives a numerical value of 1. If the proportion so employed is below the average for the state, the numerical value of the factor will be greater than 1, while it will be less than 1 in a county with greater than average representation in this occupational group. The factor dealing with the fraction employed in occupational status Group III is larger than 1 if the total so employed in this group for the individual county is greater than in the state as a whole, the value being less than 1 if the fraction is less than in the state as a whole. The remaining 3 factors are so arranged to be entirely consistent with the first 2. It will be noted that the economic index includes not only data relevant to oc-

cupation, but also to wage and farm property evaluation. No attempt was made to weight the separate elements in this expression. Approximately equal emphasis was placed on occupational status and farm evaluation because Indiana is not only an active industrial center, but also, a rich and important farm state. The economic index for a county which very closely follows the over-all state trend will be approximately 5.0 while a relatively more prosperous county with high percentage in occupational status I and/or richer farming land will have an economic index less than 5. A county at

the opposite end of the economic scale will have an index value higher than 5.0. The actual numerical value ranged from 4.29 in the most prosperous county to 8.68 in the least prosperous county with an actual mean of 5.50. The index figure has only relative ranking value and was used only for this purpose.

In preparing the descriptive items for statistical treatment, each of the 92 counties was rank-ordered along a number of dimensions. For the data of Table 1, rank-orderings were on the basis of population density per square mile, estimated population shift from 1950 to 1956, etc. For each variable, the counties were systematically ranked with the lowest ranking assigned to the lowest actual value for the variable. For example, the 92 counties were ranked from No. 1 (lowest population density per square mile) to No. 92 (highest population density per square mile). Along the dimension, estimated population shift from 1950 to 1956, the county ranked 1 showed the greatest net loss in population during the 6-year period, while the county ranked 92 showed

the greatest net increase in population for the same period. Similarly, as in Table 3, all counties were rank-ordered along the economic index axis from No. 1 (highest numerical value of the economic index) to No. 92 (lowest economic index).

In order to test for clustering of individual variables, Spearman Rank-Order Correlations were calculated for the 6 variables in Table 1, and the level of significance of intercorrelations justified the establishment of one combined urbanization variable and of 2 other unitary variables. In calculating significance of differences between means of Table 2, a conventional "t" test was applied.

For the data of Table 3, Spearman Rank-Order Correlations were calculated for within-zone variables with a conventional "t" test of significance for correlations used. A special technique for pooling rank-order correlations across zones with tests of correlation significance calculated as ordinary product moment correlation coefficients, and with degrees of freedom appropriate to the pooling, was applied.

OBSERVATIONS AND DATA

The 92 counties of the state were each described in terms of their rank order along the axes of population density per square mile, estimated population shift in the 6-year period 1950 to 1956, percent of population in urban areas, percentage of total employed in agriculture and manufacturing occupations, and the percentage in age group 16-17 years still enrolled in school. To explore homogeneous clusters of these variables, Spearman Rank-Order Correlations were calculated. These are summarized in Table 1. An inspection of this table reveals high level correlation between popula-

tion density per square mile, percent of population in urban areas, and percent of total employed in agricultural occupations. There is a somewhat lower level correlation of these 3 factors with the percent employed in manufacturing. Because these 4 factors appeared to form a crude correlation cluster, the individual rank-orders for each element were added, and the mean rank-order for the 4 variables was used as the measure of mean urbanization rank. The urbanization variable referred to in Figure 1 and in Tables 2 and 3 is, therefore, a combined factor. Estimated population shift during the interval 1950 to 1956 correlated significantly with all the urbanization factors, but at a consistently and significantly lower level, 0.3. This factor was, therefore, treated as a separate descriptive variable in subsequent analysis.

It is interesting to note that there was no correlation between the variable, percentage still enrolled in school aged 16-17, and any other variable noted. This absence of correlation was not anticipated, but, because of it, the school enrollment factor was treated as a separate social variable.

The economic index factor was not introduced into the correlation matrix of Table 1. Because this economic factor was a complex empirical composite, it was thought wise to treat it as a separate factor.

The 18 counties at each ranking extreme for urbanization, population mobility, percent still enrolled in school, and economic index, are plotted on a county map reproduced in Figure 1. It will be noted that the 18 most highly urbanized counties are distributed without pattern throughout the state. A cluster of highest-urbanization counties is seen in the northern (top) end of the state adjacent to the Gary-

TABLE 1
Spearman Rank-Order Correlations of Certain Characteristics: 92 Indiana Counties

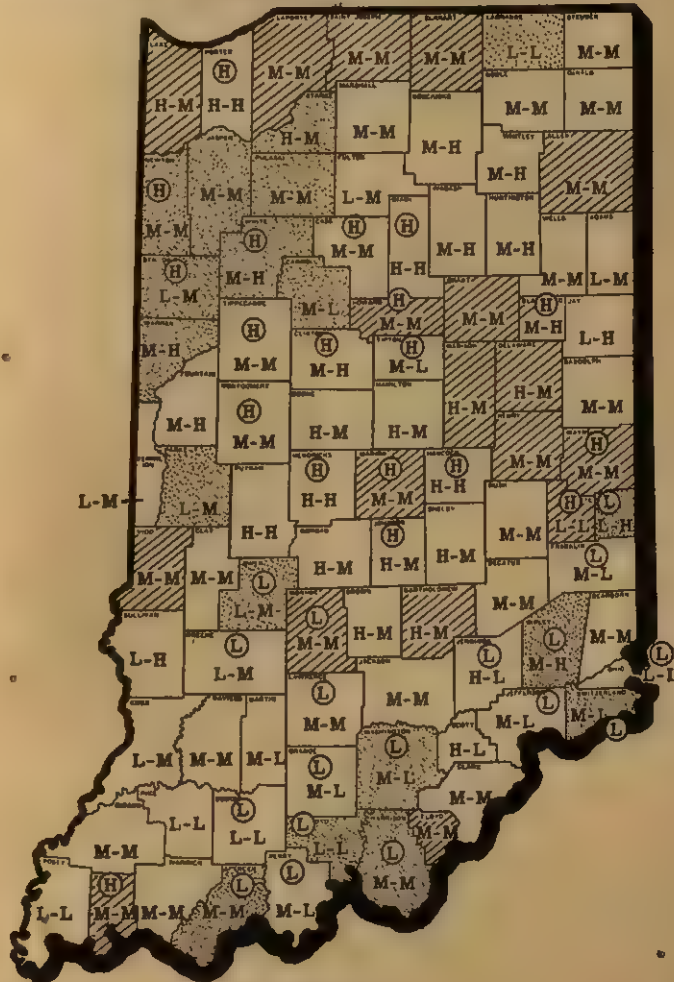
	POP. DENS. PER SQ. MI.	EST. POP. SHIFT 1950-1956	% URBAN	% AGRIC.	% MANU.	% 16-17 ENROLLED
Pop. Dens. per Sq. Mi.		.344	.925	-.886	.693	.135
Est. Pop. Shift 1950-1956			.281	-.294	.333	.113
% Urban				-.844	.660	.079
% Agric.					-.641	-.082
% Manu.						.048
% 16-17 Enrolled						

Hammond-Chicago steel mill region. Another loosely associated group extends across the central portion of the state following the historically important transcontinental trade route, and generally centered on the capital county of the state (Marion County), which, incidentally, is the third

most highly urbanized county. Two highly urbanized counties are distributed along the commercial Ohio River course in the extreme southern portion of the state.

A cluster of least highly urbanized agricultural counties is noted in the extreme northwestern portion of the state in the

FIGURE 1
Distribution of Those Indiana Counties Ranked at the Extremes (18 Highest and 18 Lowest Rank-Ordered) for the Following Variables:



- Urbanization : Highest 18-diagonal lined
Lowest 18-stippled
- Economic index : Highest 18-Circled H (Lowest numerical values)
Lowest 18-Circled L (Highest numerical values)
- Population mobility : Highest 18 (greatest net population gain)-H (at left of two-letter sequence)
Lowest 18 (greatest net population loss)-L (at left of two-letter sequence)
- School enrollment : Highest 18 (highest % of those aged 16-17 years still enrolled)-H (at right of two-letter sequence)
Lowest 18 (lowest % of those aged 16-17 years still enrolled)-L (at right of two-letter sequence)

heart of the state's richest agricultural area. The remainder of the counties ranked at the lowest extreme in urbanization are distributed irregularly through the central and southern portions of the state with a considerable number bordering the Ohio River.

There is a noteworthy geographical localization of the counties ranked at the extremes for population mobility. The majority of the 18 counties showing greatest net increase in population, that is, positive mobility, are in the central region of the state adjacent to Marion County. These counties had a net population increase ranging from 5% to 20%. In contrast, the majority of the 18 counties extreme for net population loss are along the perimeter of the state.

The geographical discrimination of the counties ranked at the extremes for school enrollment is quite clear-cut. Of the 18 counties ranked highest in school enrollment, all except 2 are in the northern half of the state. Fifteen of the 18 counties ranked lowest in school enrollment are in the southern half.

The north-south differential is even more conspicuous for counties by economic index ranking. All 18 counties ranked lowest in economic index are southern counties. Only 3 counties ranked highest in economic index are southern counties, the remainder being either junction or northern counties.

Inferences concerning the availability and utilization of state institutional facilities were drawn from statistics on mean annual state rates for the years 1956-1957 through

1958-1959. Annual admission rates for this 3-year period were averaged. No corrections were applied to transform these into standardized rates, nor were corrections for local variations in age or sex distributions within the relevant populations attempted. The institutions involved, to which data reviewed in Table 2 apply, include 7 state mental hospitals, one of which is a small, acute treatment and diagnostic center serving the entire state, and another, a state hospital serving only Marion County. The remaining 5 mental institutions are distributed around the periphery of the state. Each serves from 13 to 25 contiguous counties (Table 3). The remaining institutions include a small centrally located state facility for alcoholic patients, a northern and a southern state school for the mentally retarded, and one centrally located hospital for those with convulsive disorders. Patients in these institutions range from infancy to old age. Admissions were not subdivided by diagnostic categories. Therefore, age, sex, or standard population corrections were neither feasible nor indicated. Such corrections (8) have not infrequently been used in reporting admission data (5, 6), and in special circumstances, they are justified and even necessary. Diagnostic categorical subdivisions were considered unimportant to this study and notoriously unreliable. Gregory (5) has summarized the lack of consensus on diagnostic categorizations for such a major category as schizophrenic disorders, which makes for confusion in the interpretation of such data.

TABLE 2
Mean Annual (1956-1959) State Hospital Admission Rates for the 18 Counties Ranked Highest (H) and Lowest (L) in Selected Socioeconomic Categories

SOCIOECONOMIC CATEGORY	MEAN ANNUAL ADMISSION RATE (MEAN ADMISSION/10 ⁴ POPULATION)		SIGNIFICANCE OF DIFFERENCE OF MEANS
	HIGHEST 18	LOWEST 18	
1. Urbanization	99.0	103.0	n.s.
2. Population Mobility	93.0	93.0	n.s.
3. School Enrollment	84.0	107.0	Difference significant at <.01 level
(a) Mean Economic Index of Counties under 3 (See Text)	5.28	6.30	Difference significant at <.01 level

Two types of analyses were carried out. In one, the impact of extremes in socioeconomic and cultural variables on the utilization of available facilities was evaluated, assuming that local or zonal characteristics influencing case identification and admission were approximately homogeneous. Mean annual state institutional admission rates for the 18 counties ranked highest and lowest in selected categories are recorded in Table 2. For the 18 counties ranked highest and lowest in level of urbanization, the mean annual admission rates were virtually identical during this 3-year period. The population pool provided by the 18 counties ranked highest in urbanization was 2,660,000 in contrast with a pool 10 times smaller, i.e., 256,000 provided by the 18 least urbanized counties. There was likewise no significant difference in mean annual admission rates for those 18 counties ranked most positively mobile (with the highest positive influx of population) as contrasted with the 18 showing greatest net population loss. Since these extremes both reflect approximately equal but oppositely directed mobility, a critical analysis of the interaction of this factor with state hospital utilization is not possible (see Table 3 for a selective analysis). Among the 18 counties ranked highest in school enrollment, the mean annual admission rate is significantly lower than for the 18 counties ranked lowest in this variable. The mean economic index of the counties ranked highest in school enrollment was significant-

ly lower (higher economic status) than in the 18 counties ranked lowest in school enrollment.

At this juncture in the analysis it was proposed that the suggested differential utilization and/or availability of state hospital facilities on an educational-economic basis might be a zonal or geographic characteristic. Indeed, as already noted, the majority of high school-enrollment counties are in the northern half of the state and the majority of lowest school-enrollment counties are in the southern half.

To clarify the possible independent influence of the geographic factor, a separate analysis of mean annual admission rates for the 5 mental hospitals of the state serving a total of 91 counties was separately evaluated. These data are reviewed in Table 3.

Indiana state law requires that a person identified and accepted as a candidate for state hospital admission be admitted first to the state hospital serving his county. In rare instances, exceptions to this rule occur for Evansville, Madison, and Richmond. These 3 institutions accounted for approximately 31% of all state admissions during the 3-year period under consideration. The total admissions to the 5 institutions under consideration was 9,465, or 74% of all state institutional admissions. In the 3 state mental institutions referred to above, out-of-zone admissions ranged from .35% to 1.1% of all admissions during the period. It is evident,

TABLE 3
Spearman Rank-Order Correlations Between Mean Annual (1956-1959) State Hospital Admission Rates and Selected Socioeconomic County Variables: Within East State Hospital Zone and Pooled-Across Zones (See Text)

ZONE	N (NUMBER OF COUNTIES)	URBAN- VARIABLE	SCHOOL ENROLL. VARIABLE	POPULATION MOBILITY VARIABLE	ECONOMIC INDEX FACTOR
A. WITHIN ZONE					
L (Logansport)	21	.33	-.27	-.48*	.21
E (Evansville)	15	.26	-.21	.14	.40*
B (Beatty)	17	-.24	.09	.08	.39
M (Madison)	25	-.18	-.65***	-.34*	-.26
R (Richmond)	13	.62*	-.45	.18	.26
B. POOLED-ACROSS ZONES	91	.04	-.39**	-.24*	.04

* $P < .05$.

** $P < .01$.

*** $P < .001$.

therefore, that only rarely are exceptions made to the state admission law in these institutions. Out-of-zone admissions are somewhat more common to Beatty Hospital which maintains a maximum security division for the entire state. During the 3-year period under consideration, approximately 9% of all admissions to this hospital were from out-of-zone counties. The Logansport State Hospital maintains an extensive treatment service for those with problems related to alcoholism, and 21% of admissions to this hospital were from out-of-zone counties.

In the within-zone analyses of Table 3, one outstanding characteristic is that the interaction of the various social and economic factor rankings with institutional admission rates is patterned in a relatively unique way for each state hospital zone. Consider the significant or possibly significant correlations first. In Zone L, for example, population mobility is inversely correlated with mean admission rate. This is true also of Zone M. The trend is not constantly maintained for Zones R, E, and B, and, in fact, is in the opposite direction though not at a level approaching significance. In the pooled, across-zones analysis, this factor appears to be a significant variable at the 5% level, and might, thus, suggest a general state trend. However, the within-zone analysis would suggest that the specific expression of this social factor is intimately dependent upon other regional variables. The same conclusion is justified with respect to urbanization. In Zone R, there is a significant positive correlation between mean admission rates and urbanization ranking, which trend is reflected in Zones L and E, but not in Zones M and B. The school enrollment rank-order is significantly and inversely correlated with mean hospital admission rate in Zone M, reflecting a similar over-all trend across zones. This trend is likewise confirmed by the extremes analysis of the impact of this factor summarized in Table 2. Even here, however, the variable expression of this factor is more clearly revealed when analyzed on a zonal basis. It would appear to be a variable of little or no importance in Zone B, for example, although the trend is generally confirmed in Zones R, L, and E.

An inspection of the data of Table 3 indi-

cates that the combined rank-order correlation patterns are individualized for each of the within-zone analyses. These patterns lend some support to the conclusion that the interaction and significance of such factors as related to the identification and acceptance of an individual as institutionalized patient vary widely with other local circumstances. Some of these patterns are, of course, simply chance fluctuations of the correlation statistic.

DISCUSSION

The data reported here could not be interpreted as reflecting the incidence or prevalence of any disorder justifying institutional management in the areas noted. Only a systematic sampling of representative populations, as, for example, that conducted by Cole and associates(4), could provide useful information on prevalence. Moreover, even with regard to those identified as patients in treatment, these data concern a limited sample of the total. Data on the total number of psychiatric patients in treatment are few. Hollingshead and Redlich(9) reported, for example, that 68% of those persons identified as under psychiatric treatment from the greater New Haven area were under such treatment in state institutions during the 6-month period of their study. One could quite safely infer from the relative distribution of treatment facilities available to the greater New Haven area, as compared with those available in the State of Indiana, that the relative percentage of the total under treatment accounted for by state institutionalized patients in Indiana would be unquestionably higher than 68%, but how much higher cannot presently be estimated.

Inferences concerning morbidity incidence from admission data would presume immeasurably more information than these data provide. Most workers(3; 11, 5, 6, 7, 10, 12) are thoroughly cognizant of this problem, and the matter requires no reevaluation. It is becoming increasingly clear, moreover, that information concerning interaction of whatever social variables with admission rates, even in carefully circumscribed communities(7, 14), should be generalized only with great conservatism. It is worth noting that Locke and associates(11)

report a negative correlation between mean institutional admission rate and mean regional educational achievement for all diagnostic categories in their study of Ohio State mental hospitals. The present study would seem quite clearly to confirm this general conclusion. Nonetheless, the variable expression of the school enrollment factor on a zonal basis suggests that local circumstances may either enhance, reduce, or even neutralize the independent impact of this factor.

SUMMARY AND CONCLUSIONS

Indiana's 92 counties have been described in terms of certain social, cultural and economic variables.

1. Spearman Rank-Ordered Correlations of 6 of these variables justified the inclusion of 4 unit variables under a single composite category called the urbanization factor.

2. Net population change during the period 1950-1956 was isolated as a distinct variable which correlated at a low but consistent level with urbanization. No significant correlation* was noted between a sensitive measure of county educational status (% of those aged 16 to 17 still enrolled in school) and the other social variables studied in the state at large.

3. Counties at the extremes of urbanization followed no recognized geographic patterns of distribution. Those counties extreme for negative population shift were generally located at the periphery of the state, while those showing maximum influx of population during the same period tended to be centrally located.

4. Counties with the highest percentage still enrolled in school were located in the northern half of the state, whereas, those showing lowest enrollment in school were distributed in the southern half of the state.

5. A similar north-south discrimination of counties at the extremes of economic status also was noted.

6. An analysis of the independent impact of urbanization on state hospital admission rates, presuming homogeneous distribution of equivalent resources, reveals no differences in admission rates for the 2 groups of counties at the extremes of urbanization. The lack of interaction here may well reflect the fact that the urbanization extremes studied

died are insufficiently *extreme* to reveal an independent influence of urbanization, as has been shown in certain previous studies.

A similar analysis revealed no significant effect in those counties extreme for population mobility, but did indicate a significant inverse correlation between school enrollment and institutional admission rates.

A separate reanalysis of the interaction of these social variables with admission rates for each mental hospital, and its admission zone as a geographic and institutional unit, revealed that zonal admission rates were correlated in highly individual and specific ways with zonal socioeconomic and educational characteristics. A generalization justified by these data is that certain common sociologic variables, even at the extremes of a normal distribution, will find significant expression in their impact on the level of utilization of the state mental institution, only in a highly specific context.

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DISCUSSION

JOHN E. DAVIS, M.D. (Philadelphia, Pa.).—The present paper represents another step forward in the process of attempting to define and understand the complex social factors which are involved in decisions to seek psychiatric treatment. This search for significant parameters, other than the personal and the dynamic, is assuming greater and greater importance as psychiatry is confronted with exploding populations, migrating populations, back-from-the-suburb populations, and beatnik populations and as psychiatry is asked to take a social leadership role not only in alleviating the personal human and social distress which leads to mental illness, but in suggesting ways in which mental breakdown can be averted.

Perhaps it is a sign of confidence in the new drugs and the many other treatment methods that has enabled us to lift the horizon from the personal to the population as a whole, or perhaps it is with a sense of overwhelming despair that psychiatry realizes that considerable energy must be devoted to questions about those who come to mental hospitals. We know that it is not sufficient to have first class institutions without knowing a great deal about the characteristics of the population they are to serve.

The contribution of Dr. Nurnberger and his colleagues with this paper is, first, the derivation of an economic index by which to classify and compare populations. There are several difficulties with such indices. They are generally arbitrary, if well meant, and, in common with any classification scheme, they may obscure more significant but less noticeable real differences. If the index is intended as a preliminary tool with which to approach data, and if the tool itself remains as suspect as the data until established, then there is no real difficulty. Such indices do remind us that the tools of investigation in social psychiatry need as much research into as the object of the survey or research. Fortunately Dr. Nurnberger has given ample discussion as to the nature of the eco-

nomic index so that we can judge its appropriateness when we plan to use it in other investigations. Similar things could be said about the other dimensions of measurement used in the study.

One of the comparisons made by Dr. Nurnberger was between counties which showed high mobility, *i.e.*, moving in or out of the county, and showed no differences in mean annual admission rates. Since mobility has always been considered an important variable, it may be appropriate to report briefly on a Pennsylvania study of the Philadelphia area which is investigating the relationship between migration into the state and mental illness. We are finding that migrants into Pennsylvania from the North have a higher incidence of mental illness than migrants from the South, who in turn have a lower incidence of mental illness than Philadelphia natives. This fact obviously raises many, many questions.

Dr. Nurnberger, in turn, with his conclusion that "The significance of such factors as related to the identification and acceptance of an individual as an institutionalized patient, vary widely with other local circumstances," shows us the limitation of broad classification schemes which obscure important differences, and suggests that intensive study of local practice may be fruitful. He further cautions us against presuming more information than statistical data can provide.

In his careful study Dr. Nurnberger has indeed looked at his tools, his measuring devices, and his concepts. The fact that his regional statistics were in general confirmatory of other studies which reported negative relationships between larger regional institutional admission rate and educational achievement is tempered by his findings of possible differences on a smaller zonal scale between these two variables. Dr. Nurnberger has refined the tool, or the concept by which we measure education, he has perhaps suggested that such broad studies as this can illuminate the next step for investigation, and he may have warned us against over-generalizations.

THE FAMILY AS A POTENTIAL RESOURCE IN THE REHABILITATION OF THE CHRONIC SCHIZOPHRENIC PATIENT : A STUDY OF 60 PATIENTS AND THEIR FAMILIES ¹

ANNE S. EVANS, M.S.,² DEXTER M. BULLARD, JR., M.D.,²
AND MAIDA H. SOLOMON ³

INTRODUCTION

This paper is part of an investigation⁴ of the relative value of drugs on social therapies in the treatment of chronic schizophrenia and was undertaken at the Massachusetts Mental Health Center.⁵

The subjects were 60 inpatients from two Mass. State Hospitals all of whom had to be hospitalized at least 5 years continuously with a diagnosis of schizophrenia.⁶ There could be no diagnosis of organic deterioration or mental deficiency. All patients had to be between the ages of 25 and 50, without any imminent discharge plans. Selection of these patients was made by random sample from 136 patients at the 2 hospitals fulfilling the criteria of selection.

¹ Read at the 116th annual meeting of The American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

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⁴ This investigation was supported by a research grant MY-1690 (C2) from the National Institute of Mental Health; Public Health Service.

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⁶ The specific diagnoses by the hospital staff were as follows:

Schizophrenic reaction, paranoid type	22
Schizophrenic reaction, catatonic type	13
Schizophrenic reaction, simple type	2
Schizophrenic reaction, hebephrenic type	1
Schizophrenic reaction, chronic undifferentiated type	22
	<hr/>
Total	60

These chronic schizophrenic patients were brought to the Massachusetts Mental Health Center and treated there with tranquilizing drugs and social therapies or social therapies alone for 6 months, with the aim of rehabilitation and discharge(1). A control group remained at the parent hospitals. The improvement in many patients which seemed to warrant discharge did not always result in discharge. The success or failure of plans for discharge was often found to be dependent on the relationship between the chronic schizophrenic patient and his family.

The present report is a descriptive study of the factors that influence the relationship between the chronic schizophrenic patient and his family at the time of transfer. Portions of the data utilize material previously reported(2). Further studies involving the family's role during treatment at the Massachusetts Mental Health Center in the discharge or transfer back to the parent hospital and in the role of the psychiatric social worker at the Center are being reported elsewhere.

This report will present the patient's behavior on the ward and with his family, his social and occupational skills and his financial resources. The family will be examined in detail, including the home situation, the extent of the family's interaction with the patient and the family resources available to the patient.

The families in this study included families of orientation, families of procreation, and collateral relatives of these patients.

METHOD

The patients were transferred to the Massachusetts Mental Health Center beginning November, 1956, at the rate of 1: per week. They remained for a 6-month period unless discharged earlier. The patients remaining at the end of the 6 months returned to their previous hospital unless disposition plans

were in the process of being carried out. During the 6-month period at the Center the first 30 patients were treated with a combination of tranquilizing drugs (chlorpromazine and reserpine) and with intensive social therapies, which included psychotherapy, social casework, contact with students of various disciplines, occupational therapy and a rehabilitation program. The second 30 patients were not treated with drugs but received intensive social therapies alone.

Observations for this report were made on the patients and their families following the patients' transfer to the Center. The patients were interviewed by a psychiatrist and observed by a social psychologist to determine their psychiatric and social disability. Histories of their illnesses were obtained from the hospital records.

The families were interviewed by psychiatric social workers of the inpatient adult unit and research unit. Material included a social diagnostic evaluation of the family situation, and the research staff secured additional information from interviews with the social workers assigned to the cases. Supplementary data concerning the financial resources of the patients and families were obtained from the Department of Mental Health, Commonwealth of Massachusetts.

OBSERVATIONS ON THE PATIENTS AT THE TIME OF TRANSFER

As Richard York(3) points out, "the chronic schizophrenic patient has settled down to a minimum level of activity and social interaction . . . they have slipped into an isolated, anonymous, apathetic condition." These patients were no exception. They were distant and remained by themselves unless urged to join in a social situation. When approached, they were quiet and reserved showing little interest in further contacts, and permeating this isolation was a lack of initiative that hindered any expansion of their social relationships or activities.

Despite their failure to make social contacts, these patients often took care of their personal needs without help from the parent hospital. A majority (52%) maintained an acceptable level of dress and personal

appearance judged by community standards. More than four-fifths (87%) lived on open wards and went to the cafeteria for meals and to other parts of the hospital for activities. One-quarter of the patients made some use of privileges to leave the hospital during the day for walks, job hunting, or trips to the drugstore. Their work records also showed capacities and skills that were utilized in the hospital setting. More than one-quarter (28%) of the patients had a regular job in the hospital, and one-half worked at some daily ward task. All in all, a number of these patients took the major responsibility for their daily life routine and the parent hospital remained a place where basic living necessities were provided, rather than a place where a supervisory or therapeutic program was carried out.

This group of patients took little initiative in their relationships with their families. None was active in phoning, writing, or visiting their families, even patients with full privileges. One patient pretended indifference to his family, only to break down and cry when visited by his brother. When they were visited, or taken out for weekends by their families, the patients were usually docile and, though pleased, did not themselves take steps to continue the family contact. This seemingly indifferent attitude promoted the feeling among relatives and hospital staff that these patients were not ready for further activity and responsibility.

The other resources of these patients reflected the disabling effects of their disease as well as the effects of prolonged hospitalization. Only 1 of the 60 patients had any personal source of income or any savings, as might be expected after 5 or more years of hospitalization. Their job aspirations were limited since few patients had acquired a trade or skilled employment prior to their illness. At the onset of illness, more than one-third (40%) were still in school and only 7 patients had held a skilled job. Added to this, none of the patients held paying jobs during the long period of their hospitalization. Thus, even those with a good hospital adjustment were hampered by poverty, a lack of occupational skill, and little personal initiative.

OBSERVATIONS ON THE FAMILIES

Our material on the 60 families is presented under 3 headings: 1. The family situation; 2. The relationship between the family and the patient, specifically their attitudes toward the patient's illness and his possible release; 3. The family resources available to the patient.

1. The Family Situation: At the time of transfer to the Massachusetts Mental Health Center, four-fifths (48) of the patients had lost at least 1 parent, and one-third (22) had lost both parents. Only 11 patients had married prior to their illness, of whom 7 were legally separated or divorced. There remained only 4 patients with spouses who were available and legally responsible for the patients.

Despite the absence of parents and spouses, nearly all (57) patients had living siblings. This appeared to be a primary resource to the patient. Many siblings, however, lived outside the Metropolitan Boston area. For example, the family of Miss A, a middle-aged female patient, consisted of 2 married sisters, both of whom lived 75 miles away and had young children, making it difficult for them to come to the hospital. Finally, there were 3 patients who had no living relatives.

2. Family Interaction with the Patient: Noteworthy was that most of the families remained interested in the patient even after the prolonged separation. Four-fifths of the 60 patients were visited in the hospital by their families; three-quarters of the families visited regularly either once a week or once a month. The frequency of visits dropped off slightly after the patient had been hospitalized 13 years, yet a majority of these families also visited regularly.

Families' Perception of Illness: The families expressed varying opinions regarding the patient's illness. Twenty-five of the families were "hopeful" of ultimate cure. Three of these families did not believe that the patient was ill. For example, one family stated: "He doesn't really need hospitalization; I don't believe he's really sick—just too timid."

The rest of the families were optimistic as a result of the change of hospital and felt that the patient would be cured. "He's been sick for years. I think he'll get well now that he has been brought here. He'll get more attention." "She seems to be more interested in what is going on around her. I think she's better." "He certainly looks better. He talks to me and I can

TABLE 1
Family Visits in Relation to Length of Patient's Hospitalization

NO. OF YEARS HOSPITALIZED	ONCE A WEEK	ONCE A MONTH	NUMBER OF PATIENTS VISITED		TOTAL
			HOLIDAYS ONLY	NEVER VISITED	
5-12.9	24	12	4	8	48
13 and over	6	2	0	4	12
Total	30	14	4	12	60

TABLE 2
Families' Perception of Illness and Its Relation to Length of Hospitalization

LENGTH OF HOSPITALIZATION (IN YEARS)	"HOPEFUL"	DON'T KNOW	"HOPELESS"	TOTAL
5-12.9	22	13	5	40
13 and over	3	4	4	11
Total	25	17	9	51*

* In 9 cases the families' opinions were unknown.

understand what he is saying." Seventeen families could not express a definite opinion regarding prognosis. One family said: "Maybe he can get better here but it will probably take a long time."

Nine families believed that the patient was incurable: "I don't think she'll ever get well." "He's been sick too long—They've tried everything. I don't think he'll ever get better."

If a patient was hospitalized more than 13 years, family attitudes tended to be less favorable about recovery. This feeling on the part of the family is in accord with studies(4) indicating that the prognosis for patients becomes worse as the length of hospitalization increases.

Family Attitudes About Release: A surprisingly large number of families favored release despite the passage of 5 years. More than one-third (23) of the families favored release. They said, "We want him home with us. He's been away too long." "Everybody wants him home." Two-thirds of those families who favored release felt that the patient had a "hopeful" prognosis. Of the 14 families who were ambivalent about release, one-half (6) were "hopeful"

about the illness. These families were "frightened" of the patient but were considering the possibilities of taking him home. They felt that "many new things had happened since the patient was last home," or were fearful of "outbursts." Thirteen families were against release. They either wanted the hospital to guarantee a complete cure or stated, "We have no place for her now."

As one might expect, a belief in cure was associated with a favorable attitude about release. One mother of a single female patient felt that her daughter's illness was curable and was anxious to have her at home. A small group of families opposed release even though "hopeful" about cure and, more significantly, a small group favored release even though feeling "hopeless" about the patients' prognosis. The families who frequently visited the patient were most interested in his discharge. Half of the families who never visited were against release.

The 40 families who favored or were ambivalent about release did not have unrealistic expectations of the patients. One-

TABLE 3
Relation of Family Perception of Illness to Their Attitude About Release

PERCEPTION OF ILLNESS		ATTITUDE TOWARD RELEASE		TOTAL
		UNCERTAIN	AGAINST	
"Hopeful"	17	6	2	25
Don't Know	4	1	1	17
"Hopeless"	2	3	3	8
Total	23	14	13	50 *

* In ten cases the families' opinions were unknown.

TABLE 4
Relation of Family Visits to Their Attitude About Release

FREQUENCY OF VISITS	FOR OR UNCERTAIN	ATTITUDE ABOUT PATIENT'S RELEASE		TOTAL
		AGAINST		
Once a week	24	5		29
Once a month	10	4		14
Holidays only	3	1		4
Never visited	3	4		7
Total	40	14		54 *

* In 6 cases the families' opinions were unknown.

half of the families required only that the patient be able to feed and clothe himself in the home.

3. Available Family Resources: Financial: The families in our study were found to comprise an extremely low income group. Financial resources were discussed with 42 families. One-half of these families made less than \$3000 annually. The median income of these families was \$2500 a year, which is considerably less than the national median family income of \$4971(5) a year.

Twenty-seven families stated that they would be able to assist the patient, 4 were able to assume complete financial responsibility and 23 partial responsibility.

Twenty families could not give any kind

of financial assistance. These families were also found to be unable to support themselves and derived their support from a variety of sources such as distant relatives; S. S. Benefits and Public Welfare.

Living Arrangements: The availability of living arrangements paralleled the families' financial situation. Of the 47 families who discussed living arrangements, a majority (27) stated that they could provide a place for the patient. Twenty-five families had room for the patients at home and 2 offered to subsidize an apartment if the patient was discharged. The remaining 20 families (one-third of the total group) could make no provisions for the patient.

Employment: Virtually no families were

TABLE 5

Attitudes of Families Who Were For or Uncertain Regarding Patient's Release in Relation to Patient's Sex

SEX	EXPECTATIONS OF FAMILY			TOTAL
	MINIMAL MAINTENANCE *	ASSISTANCE IN HOME **	PARTIAL OR COMPLETE INDEPENDENCE ***	
Male	6	2	6	14
Female	15	7	4	26
Total	21	9	10	40

* By minimal maintenance was meant that families expected the patient to feed and clothe himself.

** By assistance in the home was meant to help in the home, i.e., make beds, wash dishes, baby-sit, etc.

*** By partial or complete independence was meant that the patient takes over his or her former role, i.e., for the male to assume financial independence and for the female to take over the duties of the household.

TABLE 6

The Relation of Family Resources to Family Attitude

RESOURCES AVAILABLE TO THE PATIENT	PERCEPTION OF PATIENT'S PROGNOSIS			TOTAL	ATTITUDE TOWARD RELEASE		
	"HOPEFUL"	DON'T KNOW	"HOPELESS"		FOR OR UNCERTAIN	AGAINST	TOTAL
Financial:							
Yearly Family Income							
\$2000 and over	8	9	3	20	18	5	23
\$0-1999	11	6	3	20	14	5	19
Total	19	15	6	40	32	10	42
Living Arrangements:							
Have room at home or could subsidize apartment	17	6	2	25	25	2	27
Can make no provision	7	8	3	18	11	9	20
Total	24	14	5	43	36	11	47

Note: The totals represent the number of families whose resources and attitudes were known at the time of transfer.

able to help the patient gain employment. Only one family of the 38 who discussed this question felt they could help the patient get a job. Eleven other families said they would give the patient unpaid employment in the home but the remaining 26 families said that the patient or the hospital would have to assume this responsibility.

Recreational Activities: The family situation appeared more promising regarding recreational activities. This question was discussed with 23 families and 19 had outside social or religious affiliations in which the patient could take part. Four families said that they belonged to no groups or clubs but that they did entertain and would include the patient in their plans.

Regardless of income, one-half of the families were "hopeful" of cure and did not oppose release. Actually both groups tended to favor release even though they were not necessarily optimistic about the patient's prognosis.

The availability of living arrangements was associated with greater optimism and particularly a more favorable attitude toward release. Nearly one-half of the families who could not make provision for the patient opposed release and, more strikingly, 9 of 11 families opposing release could not provide for the patient themselves. In contrast, only 2 of the 25 families who could provide a room or place for the patient opposed release.

DISCUSSION

The present report has examined the family as a resource in the rehabilitation of the chronic schizophrenic patient. Many of these patients had successfully adapted to open ward settings and have fully utilized the available hospital facilities. Inherent in the nature of the patients' disability was a lack of initiative which prevented them from undertaking contact themselves with the community. We wondered whether this hospital level of functioning could not be extended to an increased interaction with the community. We found that the family is the primary resource available to the patient in the community.

A striking finding of this study is that

families continued to visit even after the patient had been hospitalized more than 5 years. When parents could no longer visit due to old age, illness or death, the siblings assumed this responsibility. One should not underestimate the strength of family ties even after prolonged separation. The nature of this bond and to what extent it involves affection, guilt and other feelings needs further investigation. Contrary to our expectations, the patient's age was not related to the frequency of family visits. One reason for this may be the limited age range of our sample, 25 to 50 years. The sex of the patient did not affect the number of family visits. An interesting sidelight was that casework interview material revealed that families expressed more fear of possible aggressive actions of the male patients than of the female patients.

Even after long-term illness the family for the most part continued to maintain a positive attitude toward the patient's illness and optimism about release. The family's minimal expectations of performance, in the event of release, was found to be in keeping with the patient's individual capacities. They realistically expected no more of the patient at home than they had observed in the ward setting. The authors believe that the hospital's expectations for discharge of the chronic patient are often higher than the family's tolerance for his disability. Under these circumstances, the hospital may not utilize the family's positive feelings as often as it could. The fact that more families of male patients expected them to provide financial assistance suggests a different approach in their rehabilitation. Rehabilitation of female patients should be oriented around a home situation and rehabilitation of male patients should include specific help toward a job situation.

The marked limitation of family resources suggests that some families cannot afford to have the patient at home. Economic necessity then becomes an important factor in disposition planning which must be considered together with the patient's clinical condition. Although differences in family attitudes did not appear to be related to their economic condition,

further help may be needed for those families with low income in order that they do not become terribly oppressed as a result of accepting the patient into their home.

These problems may be met in several ways. The hospital needs more psychiatric social workers to stimulate and assist the patients who have reached the stalemate of a successful open ward adjustment. Social casework with the family may enable them to deal more effectively with the problems of chronic schizophrenia. The worker can assist the family to make better use of the existing community facilities. There is a need for expanded community resources geared to the patient's increased interaction with the community. These might include greater financial aid to the family, increased use of family care programs(6), more half-way houses(7), and sheltered workshops. Even more important is the need for a positive attitude toward the possibilities of increased social effectiveness of the chronic patient by the psychiatric social worker, the hospital staff, social workers in the community, and the community itself.

SUMMARY

Sixty families of chronic schizophrenic patients undergoing treatment with drugs and social therapies were studied to determine their potential role in the patients' rehabilitation and discharge.

Many of these families maintained an active interest in the patients, expressed in continuing visits to the hospital. Their attitude toward the patient's illness was optimistic and many families favored discharge. Their expectations were realistic and in accord with the patients' capacities. Their ability to help the patient was compromised by a low annual income, insufficient room at home for another family member, and inability to help the patient find a job. The importance of the increased use of the psychiatric social worker and of additional community resources was emphasized.

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DISCUSSIONS

HERMAN DENBER, M.D. (New York, N. Y.). —It is difficult to make critical remarks about a paper with which one is in agreement on most points. Mrs. Evans and her collaborators have studied a problem of unusual importance to those interested in rehabilitation of the chronically ill; a problem becoming more and more urgent with large scale use of chemotherapy reclaiming many long-term residents of mental hospitals.

There is a small question concerning methodology: on page 2 it is stated that the report refers to the factors operating "at the time of transfer," while on the next page it states that "observations . . . were made . . . following the patients' transfer to the Massachusetts Mental Health Center." Further along it is stated that "this report will present the patients' behavior on the ward." It would be of interest to know exactly when and where these observations were really made.

In examining the description of the patient sample, one is struck with the fact that this is a prognostically hopeful group with 87% having been in open wards, and 25% being able to leave the hospital for various parts of the day. It is difficult to reconcile this active "motor" life with seemingly indifferent emotional attitudes to relatives: inertia in schizophrenia is usually all pervasive.

Very little can be added to the observations, except to say that a rather high percentage of families still maintained a positive feeling to their relatives in spite of the duration of hospitalization. This has not been our finding. Fully half of 20 chronic patients on the ward have had no visitors at all or only a rare relative or friend.

It is not unusual to find families utterly opposed to a patient's release. The latter has been written off, so to speak; their place in the household sequestered and belongings disposed of. The proposal of returning a patient to this environment is usually greeted by the family with a panic reaction. Yet it is surprising how intensive casework can occasionally convert this attitude to one of acceptance.

The authors have found that the family is the primary resource available to the patient in the community. While this is theoretically true, we must view such a hypothesis with care. If chronic patients are to be discharged from the hospital, an intensive multi-disciplinary project must be set into motion in which the family plays but a small role. In our setting in Manhattan State Hospital, where the therapeutic community project has aimed at discharging long-term patients, the family was found to be one of the weak links in the community and we have been dismayed often by their attitude. As a matter of fact, the psychopathological findings in families of long hospitalized patients are startling. This may be a function of case material, since our patients form a heterogeneous group.

It is stated that "the marked limitation of family resources suggests that some families cannot afford to have the patients at home." I think this is a screen for rejection of the patient. While we have occasionally found this to be true, more often it was used as a pretext when the patient was not wanted. It is usual that adequate arrangements be made for the patient's maintenance before separation from the hospital. Intensive rehabilitation procedures should make male patients (and female patients as well) ready for gainful occupation in the community. Why then must "further help be needed for those families with low income in order that they do not become terribly oppressed as a result of accepting the patient into their house?"

While "the hospital needs more psychiatric social workers," and "social casework with the family enable them to deal more effectively with the problem of chronic schizophrenia," this is not enough. Again, the accent here is placed in one small area when we must look at the total picture of which these are but small components.

What seems to be unsaid in this paper is the magnitude of the social problem confronting psychiatry with the thousands of chronically ill long-term residents of mental hospitals, many forgotten or abandoned by their families, and others without family ties at all. We are, perhaps, based on our own case material, less

optimistic than the authors about the potential of the patient's family in the rehabilitative process. But we would strongly and vehemently support their thesis for more effective casework with families during the patient's hospitalization and afterwards.

The low socio-economic status, low I.Q., and poor job training, *etc.*, all hinder effective mobilization of the chronic patient. The defective conceptualization of family ties in many layers of our 20th century American culture does not facilitate the stated task. For instance, it is doubtful if "greater financial aid to the family" will achieve the aims outlined by the authors. What is needed is an entirely new approach to the social and economic problems of our patients; this falls within the province of the political scientists, the sociologists and the economists.

The psychiatric social worker will render an optimum service to psychiatry by complete integration into the therapeutic force operating in the direction of the patient's health. Mrs. Evans and her co-workers deserve our thanks for highlighting a significant problem area. The positive attitudes they have formulated are worthy of emulation.

RUTH I. KNEE (Bethesda, Md.).—The current interest in the rehabilitation of chronically ill patients, in discharging them from mental hospitals, and in finding some way for them to live in the community, has focused renewed interest in, and placed new significance upon, the patient's family. It has also meant a different approach to the family on the part of those who are responsible for the care and treatment of the patient, including the social worker. Traditionally, the social worker has been described as the link between the patient, the hospital, the family, and the community. There is something that is much more promising and challenging about using this intermediate position to find the positives in the family and the community and to make them available to the patient and the hospital, than there was when it appeared that the only, or major, use of the social worker was to make detailed studies in how the family had caused or contributed to the patient's illness. Her helping relationship with the family was largely used for the purposes of "interpreting the need for hospitalization and helping them to accept it."

The study reported is not an attempt to report on what was done in a few instances of successful casework which enabled families to help their ill members. Rather it is an examination of certain of the family resources in a

selected group of chronic schizophrenic patients who had been hospitalized for a number of years. It gives a cross section view of the attitudes of family members and the possible resources for rehabilitation that families offer to patients at one point in time. It does not attempt to tell us how these attitudes had come into being, what influence they had had upon the patient's illness and hospitalization in the first place, nor what happened to the patient as a result of the knowledge of the potential resources offered by the family. We are giving here a summary of the general kinds of possible contributions that the families of a group of long-term schizophrenic patients could make to their discharge and rehabilitation. These summarized data offer certain surprises and contradictions to some of the stereotyped ideas we might have about families. In spite of periods of hospitalization lasting many years, these patients were still visited by some member of their family. They had not been completely "forgotten." The families were accessible for interviews with the social worker and cooperated in the interviews and were still taking the initiative in keeping in touch with the patient. However, during the intervening years since hospitalization, there had been major shifts in family composition with death of one or both parents or divorce. Most of the family members considered the responsible relatives were siblings. Thus for most of the patients the concept of family did not mean the family of orientation or procreation.

Another surprise might be that in spite of the long hospitalization, a rather high proportion of the family members were hopeful of the ultimate cure and gave some indication that they would be willing to have the patient live with them. It would have been interesting to have had a similar study made at some time prior to the patient's transfer into the study group and of the control group. One would see how much families' attitudes of hope were related to the fact that the patient was receiving more intensive treatment than he probably had at any time before during his hospital career. It is also interesting to com-

pare these attitudes with those expressed during a study made of relatives' attitudes at a Veterans Administration Hospital—"Relatives' Attitudes and Mental Hospitalization." Most of the relatives interviewed in this VA study had a more pessimistic view about the patient's illness and were more reluctant to consider having the patient live with them. Perhaps there is a further clue to the reason for this contrast in the statement of the authors that relatives were much more concerned with the aggressive behavior of males than with females.

There were a number of areas in which the families appeared to offer minimal resources. The lack of financial resources of almost half of the families would make very difficult any arrangements to have the patient live with the family following hospitalization. The State was spending almost as much to give the patient custodial care as the family earned in a year. The lack of appropriate living space for the patient also minimized the families' potential as a resource. We wonder whether there had been changes in the family's economic status and employment level during the period of the patient's hospitalization or had this remained static. With those families having adequate financial means and living space, one wonders what kind of stimulation there would be in the daily living with a widowed parent as the established family of a sibling. It gives clues as to which families might be selected for more intensive help in planning.

This study illustrates that even after long-term illness the family continues to maintain some ties with the patient and looks to eventual discharge. However, the crucial test must still be what real support, either emotional or financial, can a sister or a brother give to a patient following his discharge from a hospital. In addition, there is strong evidence for the need of a variety of kinds of community supports, such as public assistance, living arrangements, social therapeutic clubs, that can provide for the patient the kind of help that the family is unable to give.

LOS ANGELES SUICIDE PREVENTION CENTER¹

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Suicide and suicide prevention provide major problems for clinical psychiatry and community psychiatry. Considering their importance, these problems have received relatively little organized study and attention. Although there exist in the United States and Europe several worthwhile anti-suicide services, conducted by philanthropic and religious groups, there have been no reports in English of comprehensive and systematic suicide prevention projects.

The purpose of this paper is to report progress in the development of a suicide prevention center (S.P.C.), staffed by psychiatrists, psychologists, and social workers. This work is being conducted in Los Angeles, and administered through the University of Southern California.

In addition to the primary goal of saving lives, which is shared with other anti-suicide organizations, the Los Angeles Suicide Prevention Center has 3 additional, unique goals: (a) to demonstrate the relationship between an S.P.C. and other community, mental health agencies; (b) to serve as a pilot project for other communities interested in establishing a suicide prevention program; and (c) to collect hitherto unobtainable, research data on the etiology, meaning, and prevention of self-destruction.

The principal activities of the S.P.C. are: 1. Providing intensive psychiatric, psychology, and sociologic investigation of some suicidal persons, leading to an evaluation of the person in his situation, with emphasis on the degree of suicidal danger; 2. Making appropriate therapeutic recommendations and referrals to these persons and obtaining periodic follow-up reports to observe the

progress of the cases; 3. Consulting with community agencies and practitioners confronted with special problems of suicide and exploring these special problems; 4. Collecting and analyzing data, leading to increased understanding of suicide and ideas for additional suicide prevention measures. These therapeutic, community oriented, and research activities proceed concurrently and harmoniously.

Our current strategy for suicide prevention work is derived from recent studies which showed that the great majority of persons who commit suicide make their intentions known in advance through suicidal threats, suicidal attempts or certain behavior patterns (such as the depressive syndrome or sudden increase in alcohol and barbiturate consumption). We have, then, a rather large group of potentially suicidal persons, which contains within it, as a relatively small sub-group, the majority of committed suicides. Very little is now known about the total number, range, and characteristics of the population of potentially suicidal persons. We are using 3 methods to obtain these much needed data: (a) surveys of the community with questionnaire and interview techniques; (b) abstracting large numbers of charts from emergency hospitals, general hospitals and psychiatric hospitals; (c) the gradual accumulation of detailed case material at the S.P.C. In addition, we have collected information on suicidal victims through interviews with surviving relatives, friends, physicians, and other informants. We plan eventually to compare 4 groups: committed suicides, suicide attempts, suicide threats, and non-suicidal persons.

For example, we made a survey of all Los Angeles physicians for their experience with suicide attempts, receiving a gratifying 80% response. From these responses and reviews of the charts of several hospitals, we obtained identifying data (sex, age, race, marital status, occupation, location in the city, method, time, and outcome of attempt) for 2600 suicide attempts, representing a

¹Read at the 116th annual meeting of the American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

Condensed version of the May, 1960, report.

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sizeable fraction of the total (estimated conservatively to be 6,000 to 7,000) for Los Angeles in 1957. In selecting suicide attempt cases for intensive study, the S.P.C. has been attempting to duplicate proportionately the characteristics of the total group of suicide attempts. Many of our cases were seen in hospitals soon after a self-injury. Others came from a variety of referral sources, such as physicians, judges, social work agencies, and there have been a number of self-referrals.

At the S.P.C., case histories are obtained from patients and significant relatives and friends by the professional staff members, and a battery of psychological tests is administered. Much of the information obtained is coded and punched on cards for future analysis. We have been particularly interested in evaluating the degree of suicide danger through such indicators as the psychiatric diagnosis, the effects the patient's communication has on others, the meaning to the patient of his self-destructive behavior, the actual lethality of his behavior, the manifest anger, the self-image, the unconscious masochism, positive and negative reactions to therapy and so on. Possibly, with the aid of computing machines, we will be able to construct formulae for reducing these diverse and complex data to a few comprehensive indices of suicidal danger.

Until such formulations are developed, a discussion of this crucial problem, the assessment of suicidal potential, should be liberally spiced with case illustrations, which space limitations preclude. What follows, therefore, are a few highly condensed extracts from our clinical experiences.

Many persons who made suicide attempts or threats appeared to us to have a very low potentiality for suicide. In this group the patients were immature, passive-dependent, passive-aggressive, self-dramatizing individuals who simulated a suicidal mode of action in order to gain a point or manipulate a key person. The actions were impulsive, usually occurred in close proximity to other persons, often when anger would have been appropriate, and could have been a threat to life only by accident or miscalculation. Such persons usually have a record of chronic instability in their per-

sonal relationships and frequently can profit to some extent by family counseling and casework in social agencies. Then, the role of the S.P.C. has been to reassure the agency against the danger of suicide and act in the capacity of a consultant.

We encountered a number of persons whose suicide potential was moderate in that the risk of death depended upon the outcome of a very close, disturbed, ambivalent, interpersonal relationship. These mostly involved spouses or lovers but also included homosexual partnerships and parent-child combinations. In fantasies, these persons wanted to die but also wanted to be rescued and live. In suicide attempts, they often endangered their lives severely but also made provisions for being rescued, as if their danger was an ordeal or a trial of love or a gamble with death. We have been impressed by the durability of these ambivalent ties between people and how they resist change. Often both persons in the dyad are potentially suicidal. If such ambivalent but symbiotic interpersonal bonds are broken too abruptly, self-destructive actions can be anticipated.

High suicide potentiality was associated especially with severe depression, restless schizophrenia, and alcoholics who had exhausted their emotional resources. Suicide in such persons is seldom a matter of sudden impulse, and thoughts of suicide appear persistently in their interviews and psychological tests. The danger here is that the patient may be overlooked and returned to the community even after a suicide attempt. When the suicidal danger is evaluated as high, we have found no substitute for the safety and other therapeutic advantages of a psychiatric ward.

Resistance to the idea of psychiatric hospitalization is extremely common, both in patients and their families. We found that the sooner we interviewed a patient and his family, during a time of suicidal crisis and anxiety, the better, and we had to accustom ourselves to evaluating patients quickly and making emergency dispositions. The attitude of the relatives and family was often a decisive factor in the decision whether to hospitalize a patient or recommend ambulatory therapy. When there was no family or friends available, we have occasionally used

volunteer assistants to accompany a suicidal person to the hospital.

As we receive more and more telephone inquiries, the need for a 24-hour emergency psychiatric service emerged, and we have considered possible ways to institute such a program. So far, we have been able to use the panels of physicians set up by the medical associations who are available for emergency calls. During the first year of activity, the S.P.C. was in touch with well over 50 community agencies and resources in its efforts to help patients. We have received from other agencies numerous requests for information and brief consultation and acted as a referral service for many cases we did not see ourselves. We have been asked for consultation opinions on such issues as: what should a telephone operator or intake social worker say to persons who threaten suicide over the phone? How should a suicide occurring on a psychiatric ward be handled with the other patients and medical personnel? How can we predict when recovering suicidal patients are ready for discharge? We are working with the Los Angeles police department in a project to determine how many persons who committed suicide had previous contacts with the police. The Superior Court in charge of commitments has asked us to evaluate certain prospective commitment cases whose status was obscure.

One aspect of our work with community agencies deserves special mention. Dr. Theodore Curphey, the Los Angeles Coroner, deputized members of our project to assist him in investigating a large number of cases in which the mode of death was not clearly indicated by the physical evidence and routine police reports. He noted that only about two-thirds of the suicide certifications made in his office were based on absolutely unequivocal evidence and about one-third demanded some sort of psychological inference as to the intention of the victim. Similarly, there was another group of cases in which a certification of suicide might very well have been made but psychological inference led to a presumptive diagnosis of accident. He felt that psychiatrists and clinical psychologists could add a new dimension to the diagnosis of intention even in a dead person. Information from our

interviews with relatives, physicians, friends and other informants, reviewed with the Coroner at what he calls "psychological autopsies" did indeed clarify the diagnosis in a number of cases.

Our reports confirmed previous observations that many accidents and homicides are closely related to suicide. We learned that a systematic bias on the part of the Coroner would substantially affect suicide statistics for any given community; that certain masochistic perversions can and do lead to death by asphyxiation or hanging; that most persons who play Russian roulette cheat; that persons who are taking large amounts of barbiturates over any extended period of time are living on the very edge of death and often slip over without quite meaning to; and that interviews which were primarily investigative often had secondary therapeutic benefits. Survivors of the deceased were able to express feelings and obtain information which reduced guilt and helped them formulate plans for solving problems, for example about the children of a parent who committed suicide. Noting this, the Coroner began referring distraught survivors of suicide victims to us for supportive interviews even when the mode of death was not in doubt.

CONCLUSION

Suicidal reactions represent a complicated synthesis of mental illness and interpersonal or social-living problems. Many potentially suicidal persons can be greatly helped by appropriate psychiatric treatment. Often pre-suicidal behavior is associated with strong defensive efforts (in patient and relatives) to deny the problems and avoid facing the illness. Opportunities to circumvent the resistance should be seized whenever possible.

Some benefits of a Suicide Prevention Center are:

1. Some pre-suicidal persons get appropriate treatment who might not otherwise get treatment.
2. Much needed data, especially longitudinal studies of the lives of pre-suicidal persons, are collected and analyzed.
3. The S.P.C. facilitates the functioning of a number of different agencies and com-

munity resources where they are concerned with suicide, leading to smoother handling of pre-suicidal persons.

4. The S.P.C. helps provide educational information for police, physicians, judges and others in a position to recognize pre-suicidal persons.

5. Proper publicity might help overcome the popular prejudice against psychiatric hospitalization.

6. The S.P.C. offers an opportunity for experimental activities such as psychiatric emergency call service and the use of supervised volunteers in emergency situations.

Finally, it should be said that there is

more to suicide than mental illness. In a sense, self-destruction reflects the relationship of the individual to his community and his civilization. It may be that a certain minimal level or rate of suicide is "built in" to our competitive culture, part of the price we pay for our prized individual freedom to dispose of our lives as we wish. As the Suicide Prevention Center develops we hope to increase our knowledge of suicide, sharpen our diagnostic accuracy and contribute answers to some of the questions we have raised, but as far as we can see into the future, suicide and suicide prevention will continue to present new problems.

THE EFFECTIVENESS OF PSYCHOTHERAPY ALONE AND IN CONJUNCTION WITH PERPHENAZINE OR PLACEBO IN THE TREATMENT OF NEUROTIC AND HYPERKINETIC CHILDREN¹

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INTRODUCTION

This paper will report the preliminary findings of a study comparing the effectiveness of three short-term treatment schedules, consisting of (a) psychotherapy alone, (b) placebo plus psychotherapy and (c) perphenazine plus psychotherapy, upon the response of each of 2 patient groups, designated as (I) neurotic and (II) hyperkinetic. The present study is one of a series³ designed to weigh the effectiveness of pharmacologic and psychologic factors in treatment of disturbed children. The plan of this experiment and the significance of its findings can best be understood in the context of a brief summary of the results obtained in a previous investigation.

PREVIOUS FINDINGS

By a double-blind study design, we contrasted the effectiveness of meprobamate (800-1600 mg.), prochlorperazine (20-40 mg.) and placebo in the treatment of disturbed children who received concurrent brief psychotherapy (1). Tables 1 to 3, modified from the original paper, summarize the principal findings.

TABLE 1—1959

Agent	Improvement		Total
	Significant	Mild or None	
Meprobamate	8	7	15
Prochlorperazine	7	12	19
Placebo	14	6	20
Total	29	25	54

Table 1 indicates the clinical outcome of patients on each of the 3 medication sched-

ules. It is clear that the results provide no evidence for superiority of either drug to placebo. Indeed, it appears that patients on prochlorperazine did less well than those on placebo. This finding may correlate with the 30% incidence of side effects from prochlorperazine, which was twice that from meprobamate and four times that associated with placebo.

Since we had anticipated that patient response might be a function of psychiatric reaction type (2), we examined the response within each of the major diagnostic categories we employed. The diagnosis neurotic was made in those cases in which the manifestations of, or defenses against, anxiety were predominant, in accordance with APA nomenclature. It should be emphasized that some of these children might have been classified under the rubric: adjustment reaction of childhood, neurotic traits. The duration of the symptoms—6 months to 2 years—made it difficult to consider these as transient situational reactions, although this appears to be common practice in mental hygiene clinics (3).

Children who were overactive, distractible, non-conforming and disturbing to others, but who showed little or no anxiety, were classified as hyperkinetic. It should be noted that children with sociopathic behavior were *not* included in this category.⁴ Table 2 reveals the similarity of the response within each of the diagnostic categories to each of 3 treatment schedules.

In view of the lack of evidence for specific therapeutic action by either of the drugs, it appeared justified to sum the treatment subgroups in order to examine diagnostic category as a variable relevant to outcome. When this was done, the marked difference between the response of neurotic and hyperkinetic children was revealed, with 70% of

¹ Read at the 116th annual meeting of the American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

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³ Supported by Grant MY-2583 from the Psychopharmacology Service Center of the National Institute of Health.

⁴ The 10 sociopathic children in the original study showed the least response to the treatment program (1).

TABLE 2—1959

Diagnostic Category Agent	Improvement		Total
	Significant	Mild or None	
Neurotic			
Meprobamate	4	0	4
Prochlorperazine	3	5	8
Placebo	8	1	9
Hyperkinetic			
Meprobamate	4	7	11
Prochlorperazine	4	7	11
Placebo	6	5	11

the former and only 40% of the latter showing significant improvement. The chi square for Table 3 is 4.34, corresponding to a probability value of less than 0.05.

TABLE 3—1959
Response as a Function of Diagnosis

Diagnostic Category	Improvement		Total
	Significant	Mild or None	
Neurotic	15	6	21
Hyperkinetic	14	19	33
Total	29	25	54
$\chi^2=4.34$		$p<0.05$	

The lack of an untreated control group precludes any conclusion as to whether the response was "spontaneous" or "therapeutic." But there is evidence of a relationship between diagnosis and outcome and none for a pharmacotherapeutic action of either of the drugs studied.

It was of interest that the favorable response of the neurotic cases was maintained at re-evaluation 1 month and again 7 months after the termination of treatment. Preliminary results (unpublished) from an 18-month follow-up study of the original patients show maintenance of improvement in the neurotic group but a gradual loss of even the lesser gains obtained by the hyperkinetic group.

It therefore seemed to us to be of interest to examine the following questions: Could the finding of a predictable difference in outcome as a function of diagnosis be confirmed? Was the apparent therapeutic response dependent upon placebo administration or could it be obtained with psychotherapy alone? Would a new agent, perphenazine, prove to be more effective than placebo?

METHOD

In order to investigate these questions, we employed the following procedure. Patients were assigned randomly to one of 3 treatment schedules: (a) psychotherapy without medication (b) psychotherapy plus placebo (c) psychotherapy plus perphenazine (8-16 mg.). It was not possible to conceal from the therapists the patients not receiving medication, but they did not know which patients were on placebo and which on perphenazine. For those cases who received "medication," the number of capsules prescribed was increased by 50% and later by 100% if no improvement was noted at the 1 week and 3 week examinations, respectively.

The treatment program, described in detail in the original publication(1), consisted of 5 sessions: an initial 60 to 90 minute evaluation by a social worker who saw one or both parents and a simultaneous interview with the child by a psychiatrist, plus 4 half-hour treatment sessions for both parent and child at 1, 3, 7 and 11 weeks after intake. After the 7th week session, all medication was discontinued in order to permit a final evaluation of behavior without medication.

Improvement scores were based upon the mother's report to the social worker, an independent assessment obtained from the school, and the psychiatrist's impression from observation of the child. In our previous study, we had found significant correlations between each pair of these 3 scores. In the present study, with a more scrupulous effort to have the psychiatrist make his evaluation without knowledge of the mother's or the school's report, the psychiatrist's score was found to be at variance with the home and school scores, whereas the home and school scores remained highly correlated. The final decision as to improvement was made jointly by the psychiatrist and the social worker from a review of the available information from home, school and clinic, with greater weight given to home and school information than the impression gained from the clinical interview.

Improvement was scored as "significant" when symptomatic change was sufficient to permit the child to effect a more satisfying interpersonal adjustment and as "mild"

when amelioration of symptoms occurred without a meaningful change in adjustment. For clarity of presentation, the category of significant improvement has been contrasted with a combined category representing both mild improvement and no change. This, in essence, imposes a demand for unequivocal change before a patient is classified as improved.

As an independent check on the prognostic implication of the diagnostic categories, 17 neurotic and 15 hyperkinetic cases, treated at the parent clinic by conventional outpatient psychotherapy during the same time of the year (2) as the experimental patients, were randomly selected from the files of the Children's Psychiatric Service. Assignment to diagnostic category was based upon a study of the initial history and examination. After this determination had been made, the treatment interviews were examined at intervals corresponding to those employed in the experimental study in order to determine improvement.

RESULTS

The data were first examined by diagnostic category. Table 4 indicates the response distribution for the experimental group at the 7th week. Two-thirds of the neurotic cases as opposed to one-third of the hyperkinetic cases demonstrated significant improvement, a difference significant at better than the 0.05 level of confidence.

TABLE 4—1960
Response as a Function of Diagnosis
Experimental Subjects

Diagnostic Category	Improvement		Total
	Significant	Mild or None	
Neurotic	21	12	33
Hyperkinetic	8	15	23
Total	29	27	56
$\chi^2=4.73$		$p<0.05$	

A separate analysis of the record search of the clinic treatment cases, in Table 5, reveals similar but even sharper findings: 70% improvement among neurotic versus 15% among hyperkinetic cases.

Both the experimental and the clinic cases confirm our hypothesis that the diagnostic differentiation between "neurotic" and "hyperkinetic" is a meaningful predictor of out-

TABLE 5—1960
Response as a Function of Diagnosis
Clinic Service Cases

Diagnostic Category	Improvement		Total
	Significant	Mild or None	
Neurotic	12	5	17
Hyperkinetic	2	13	15
Total	14	18	32

$p<0.01$ by Exact Test from an extension of Finney's Table by R. Latscha (Biometrika 40, parts 1 and 2, June 1953).

come in patients receiving brief outpatient treatment.

In order to assess the effect of placebo administration on the impact of psychotherapy, Table 6 lists outcome for the experimental group by diagnosis and by treatment schedule. There do not appear to be any notable differences between the 2 treatment schedules, although the numbers are small and the finding cannot be considered as firmly established for this reason.

TABLE 6—1960
Response as a Function of Diagnosis and
of Treatment in Experimental Subjects

Diagnostic Category Agent	Improvement		Total
	Significant	Mild or None	
Neurotic			
1. Psychotherapy Alone	8	5	13
2. Psychotherapy plus placebo	8	4	12
Hyperkinetic			
1. Psychotherapy Alone	1	6	7
2. Psychotherapy plus placebo	1	4	5

The homogeneity of the response rates in these 2 non-drug groups appeared to warrant combining them into one category for contrast with the drug group in Table 7.

For the neurotic patients, perphenazine appears to offer no advantage over the psychotherapy or placebo schedule. It should be borne in mind, however, that the improvement rate in the neurotic patients is so near ceiling in the placebo comparison groups that a drug would indeed have to be highly potent for its effect to be manifested.

For the hyperkinetic patients, however, there does appear to be a suggestion of

TABLE 7—1960
Assessment of Perphenazine

Diagnostic Category Agent	Improvement		Total
	Significant	Mild or None	
Neurotic			
1. Perphenazine plus psychotherapy	5	3	8
2. Psychotherapy with or without Placebo	16	9	25
Hyperkinetic ⁵			
1. Perphenazine plus psychotherapy	6	5	11
2. Psychotherapy with or without Placebo	2	10	12

benefit from perphenazine beyond the placebo effect. A current double-blind study of perphenazine and matched placebo in hyperkinetic patients should serve to provide more definite information.⁵

TOXIC REACTIONS

Complaints about side effects were noted in 6 of the 19 patients on perphenazine and in 2 of the 17 on placebo. Seven of the 8 complaints were limited to drowsiness which remitted without change in dosage. The one toxic reaction of consequence occurred in a hyperkinetic child on perphenazine; he developed torticollis and marked drowsiness, both of which disappeared when the dose was reduced from 8 mg. to 4 mg. per day.

DISCUSSION

In two experimental investigations and one retrospective study, a significant difference has been demonstrated in the clinical response of children with "hyperkinetic" and "neurotic" reaction patterns. The regularity of the finding is emphasized in Table 8 in which the clinical results from the 3 studies are summarized. With the possible exception of the hyperkinetic service patients, about whom we shall comment in a

⁵ Thus far (Jan. 1961), 39 additional hyperkinetic subjects, 19 on perphenazine and 20 on placebo, have been processed in this new study. An analysis of the results indicates that the "suggestive" findings noted above were a function of random variation; when the 39 new patients are added to the 23 reported in this paper, the outcome of the placebo series is identical with that of the perphenazine series. These findings will be reported in greater detail (13).

later paragraph, the mean improvement scores for each reaction type are strikingly consistent from one study to another.

TABLE 8
Three Studies Contrasted

Diagnosis & Study	Improvement Category		Improvement Mean-Score
	Significant	Mild or None	
Neurotic—1959	16	5	1.7
Neurotic—1960	21	12	1.5
Neurotic—C.P.S.	12	5	1.6
Hyperkinetic—1959	14	19	1.1
Hyperkinetic—1960	8	15	1.1
Hyperkinetic—C.P.S.	2	13	0.5

If we combine the results of the three studies, a step that would appear permissible in view of their similarity, it can be seen in Table 9 that the 2 syndromes behave in almost diametrically opposed fashion. The chi square for the table is 16.78, which is highly significant ($p < 0.001$).

TABLE 9
Three Studies Combined

Diagnostic Category	Improvement		Total
	Significant	Mild or None	
All Neurotic Cases	48	23	71
All Hyperkinetic Cases	24	47	71
Total	72	70	142
$\chi^2 = 16.78$		$p < 0.001$	

It might be contended that the magnitude of the difference, though great, is simply an expression of the investigators' anticipations which unwittingly colored their evaluations of change. Three considerations militate against this possibility. First, we did not anticipate this sharp difference in outcome at the time of the first study, whose findings became evident only when the results were tabulated. Second, the several residents who treated the service cases were not familiar with the hypothesis. Third, the difference in outcome was clearly evident in the school teachers' ratings of both experimental groups.

The predictable relationship between outcome and reaction type emphasizes the importance of diagnosis (4). It may well be that one factor in the disenchanting results regularly obtained in efforts to evaluate outpatient treatment (5) arises from the failure

to contrast treated and untreated cases within each diagnostic category rather than for a heterogeneous assemblage of patients whose initial diagnostic characteristics are not segregated (6). If our findings are valid, then it is clear that mere differences in the proportions of hyperkinetic and neurotic cases assigned to treatments x, y and z could result in entirely spurious evidence in favor of one over another.

The poorer outcome of the hyperkinetic children treated as service cases as compared with those in the experimental study may, of course, be an adventitious difference. However, a study of the drop out rates is instructive in this regard. As might be anticipated, the drop out rate for neurotic cases did not exceed 5% in any group. However, the rate of drop outs for the hyperkinetic cases by the third month was 60% for the service cases whereas it was less than 10% for both experimental groups. It is our clinical impression that this difference resulted from the emphasis on time-limited and goal-limited therapy in the experimental study as contrasted with the conventional open-ended approach. This suggests the unsuitability of the model of the treatment of neurosis in the approach to the treatment of hyperkinetic syndromes.

The indifferent response of hyperkinetic children to short-term psychotherapy with or without accompanying placebo may reflect the presence in this group of a core of cases with an organic syndrome of "constitutional" or traumatic etiology (7). It is significant in this regard that Pasamanick and his co-workers (8) have found a higher incidence of complications of pregnancy and parturition in the birth records of children with behavior disorders, a finding that was most striking for those cases classified as "hyperactive, confused, and disorganized." Moreover, O'Neal and Robbins (9) found a much higher rate of adult psychiatric disability in the later careers of children with aggressive behavior disorders than of neurotic children, although their categories and ours do not correspond completely.

It would appear that hyperkinetic children are a population at risk for psychiatric disability and yet are less likely to be taken on as treatment cases by most child psychiatry clinics because of their unsuitability for

the preferred mode of treatment; namely, psychotherapy (10). This highlights the importance of research with a variety of treatment methods, among which pharmacotherapy would appear to have a high priority. Rather than contenting ourselves with treating what we know how to treat but may be less in need of treatment, we should search for methods of reaching those who seem refractory to present techniques and constitute a reservoir of psychopathology (10).

Our results with the neurotic reaction patterns are consistent with the general clinical impression of the effectiveness of outpatient therapy for psychoneurosis. We are currently investigating measures to provide a comparable untreated control group of neurotic patients in order to assess the extent to which spontaneous remission of symptoms may account for these findings. But, at the least, the good symptomatic result from short-term therapy, sustained at re-evaluations 6 and 18 months after termination of treatment, suggests the desirability of a short-term focus in mental hygiene clinics in order to reach a larger number of patients than is possible when long-term treatment pre-empts scarce professional time (11).

Indeed, it is conceivable that long-term therapy for all but severe psychiatric disorders may increase disability by fostering dependency and by permitting, if not encouraging, the patient to focus on pathology. Other studies have indicated that a time limit hastens the therapeutic process (12), perhaps by necessitating an emphasis on the mobilization of assets. In essence, the patient and his family are being encouraged to assume responsibility, and are being reassured as to their competence to do so, by the emphasis on time-limited treatment.

The prompt and usually satisfactory response of neurotic cases to brief psychotherapy leaves little room for any but the most remarkable drug to demonstrate its effects. Whether drugs or placebo alone might be effective where even brief psychotherapy is unavailable is a question that deserves exploration although it is methodologically difficult to exclude the impact of the doctor-patient relationship. On the other hand, it is clear that the unsatisfactory results with the hyperkinetic behavior disorders necessitate

a search for pharmacologic and other therapeutic agents. We are in the process of extending our current suggestive findings with perphenazine by pursuing its use in a larger series of cases and are inaugurating a study of agents with contrasting chemical properties.

SUMMARY

Pediatric patients with neurotic and hyperkinetic reaction patterns have been treated experimentally on one of 3 schedules: (a) brief psychotherapy, (b) brief psychotherapy plus placebo, (c) brief psychotherapy plus perphenazine. Analysis of the clinical response rates has led us to the following conclusions:

1. Children with neurotic symptomatology show a prompt and enduring response to a brief program of psychotherapy at a level of improvement (60-70%) that is significantly greater than that attained by children with hyperkinetic syndromes (15-40%).

2. No evidence was obtained for any enhancement of the response to brief psychotherapy from the addition of placebo medication.

3. We were unable to demonstrate a significant difference between response to placebo and to perphenazine when administered concomitantly with psychotherapy.

The implications of these findings have been discussed.

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A RESEARCH MODEL FOR THE EVALUATION OF THE EFFECT OF PSYCHOPHARMACOLOGICAL AGENTS¹

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PURPOSE OF STUDY

The purpose of this study was to determine the therapeutic effectiveness of a new psychopharmacologic agent, a pipiridyl phenothiazine, No. 2445, in the treatment of chronic schizophrenic patients who exhibit various degrees of withdrawn behavior. The study was also designed to demonstrate the feasibility of collaboration between a central research bureau and the service staff of a state hospital.

METHOD OF STUDY

The series included 47 patients, 23 males and 24 females, with a clearly established diagnosis of schizophrenia. Their ages ranged from 24 to 68 years. Chronicity, in terms of hospital residence, ranged from 2 years 3 months to 38 years 6 months. This biased sample was divided into 2 subgroups of 16 patients each, 8 males and 8 females, and one subgroup of 15 patients, 7 males and 8 females. (This third group, diagnosed as Group I, or mildly withdrawn, had its 8th male drop out at the beginning of the study because of persistent weight loss during the baseline evaluation). The 3 groups represented degrees of withdrawn behavior in terms of the following criteria: Group I—mild, Group II—moderate, Group III—severe.

The selection of the patients was made by going through various wards, speaking with ward personnel, interviewing patients and choosing those who would best fit the desired categories. Their records were then checked to assure that the diagnoses and length of hospital stays fitted the needs of the experimental design. In this way we felt our selection of patients was more accurate.

The design included 5 phases: Phase I—baseline studies; Phase II—comparison of placebo and active treatment groups; Phase III—active treatment of all patients; Phase IV—reinstitution of a comparison of active treatment and placebo groups; Phase V—post-treatment evaluation.

Phase I. Baseline studies were conducted after the patients had been off all medication for 1 month. These studies were continued over a period of 2 months during which the patients were still off medication, and a second baseline rating was made at the end of this time.

The studies included observations made by psychiatrists, nurses and psychiatric technicians, and laboratory determinations by laboratory technicians. The psychiatrists were responsible for the psychiatric, physical and neurological evaluations. They also completed the Wittenborn Psychiatric Rating Scale, the Wittenborn Supplement for Chronic Schizophrenic Patients and the Standard Mental Status. The nurses were responsible for physiological studies such as TPR, blood pressure, weight, appetite, sleep and bowel habits. In addition, the nurses and psychiatric technicians made the observations for the Burdock Ward Behavior Rating Scale. Two sets of these ratings were made at each evaluation period. They were made independently for each patient by a nurse and a technician.

Phase II. At the start of the treatment period, one-half of the patients, Group A, were given the active compound 2445 and one-half, Group B, received the identical-appearing placebo. This was administered by double-blind procedure so that 50% of each subgroup received the active compound. The dosage schedule for the first week was 20 mg. b.i.d.; the second week, 20 mg. t.i.d., increased to 40 mg. t.i.d. for the remaining 6 weeks of this treatment period. At the end of this 8-week period, all baseline studies were repeated.

Phase III. All patients received the active

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compound for 16 weeks. During this phase the dosage schedule was gradually increased to a maximum dose of 80 mg. t.i.d. for a period of 2 weeks, a total of 240 mg. daily, then reduced for 2 weeks to a dosage of 60 mg. t.i.d., and for the remainder of this period a dosage of 50 mg. t.i.d. was maintained. During this period of active treatment of all patients, the total daily dosage varied from 120 mg. to 240 mg. with all patients maintained during the final 4 weeks of Phase III on a total daily dosage of 150 mg. At the end of this period all baseline studies were repeated.

Phase IV. The original active treatment and placebo groups were reinstituted on a fixed treatment schedule of 50 mg. b.i.d. for Group A. At the conclusion of this phase, all baseline studies were repeated.

At the conclusion of Phase IV Group A had been under continuous active treatment from September 9, 1959 until April 8, 1960, or approximately 7 months. Group B had been on placebo treatment for 8 weeks, on drug treatment for 16 weeks, and on placebo treatment for the final 4 weeks.

SIDE EFFECTS

The most noticeable side effect was extrapyramidal symptoms manifested mainly by rigidity of extremities, masked facies, slow deliberate gait, retardation of verbal responses and increase in salivation. These symptoms were observed in 10 of the 16 female patients in the mild and moderate groups during the period when all patients were receiving maximum medication.

One Group A male patient classified as mildly withdrawn, developed oculogyric crises during the initial medication period. This was controlled by Akineton. This same patient was off medication for 2 days prior to Phase IV and following his second dosage of 50 mg. of the drug he again developed oculogyric crises. This, I believe, can be attributed to an individual idiosyncrasy to the drug.

One Group B female patient classified as moderately withdrawn, had a reactivation of an acute catatonic stupor which required force feeding. This reaction set in after Phase III when all patients had been receiving medication. The reaction of this patient was so severe that she remained in

a kneeling, prayerful position most of the time and it was necessary to remove her from the project.

In the severely withdrawn and older age group, 3 Group B, or placebo group, female patients died as a result of severe respiratory disease during an influenza epidemic. One Group A female patient diagnosed as mildly withdrawn had a kyphoscoliosis and died during the same epidemic. Post-mortem examination on this patient revealed a very poorly developed cardiovascular system.

RESULTS

Physiological. Among the women in both Groups A and B there was a general and moderate leucopenia varying between 500 and 1000 reduction of the white blood cells. This was revealed in the testing period at the end of Phase III when all patients were on active treatment, and was apparent rather than real.

Metabolic and Biochemical. There were no significant changes in weight, blood pressure, sleep patterns, appetite or bowel habits in any of the patients on the physiological evaluations. One male patient in Group A showed a persistent 1 to 2+ sugar in the urine. However, all of his blood sugar determinations were within normal limits. Liver studies showed no essential changes.

Neurological. The only neurological findings were extrapyramidal symptoms described under Side Effects.

BEHAVIORAL

1. Burdock Ward Behavior Rating Scale. This Scale provides a measure of severity of illness and an index of response to treatment for mental patients. The Scale consists of 150 items drawn from 3 categories of observation. These categories are appearance and deportment, behavior in verbal context and adaptation to ward routine. The items were constructed so as to reflect observable units of behavior. They describe such activities as facial expression and grooming, eating and toilet habits, physical status, attitudes, cooperativeness, communicational, vocalization and speech patterns, interpersonal relations, hostility, or aggressiveness, mannerisms, affect and special symptoms.

Two baseline Ward Behavior Rating Scales were completed making a total of 5 such ratings. At each of the 5 periods 2 ratings were received for every patient, from 2 different observers. Ratings for the male patients averaged 90% reliability and for the female patients 65% reliability.

Among the males, there was a significant rise in the mean scores of Group A from the first to the final rating. Group B similarly showed a significant rise in the mean scores from the second rating period (end of placebo treatment) to the fourth rating period (end of drug treatment). Among the females the differences between these rating periods were not significant. However, over the various periods a slight trend to increase mean scores is apparent among Group A, whereas the mean scores for Group B fluctuate, showing no consistent trend.

The item analysis on this rating scale is as yet incomplete. We therefore do not know the areas in which improvement occurred.

2. Clinical Evaluations by Doctors and Nurses. Clinical evaluations were made at the end of Phase III, the period during which all patients received the drug, and at the end of the study. At the end of Phase III 2 female patients in Group A were rated much improved. At the end of the project one of these patients was rated as being worse because of increased aggressiveness on the ward. At the end of Phase III of 4 female patients in Group A rated as slightly improved only 2 retained this rating at the end of the project. One patient was rated as being worse at the end of Phase III. Four patients were rated as being worse at the end of the project. One male patient in Group A was rated as much improved both at the end of Phase III and at the end of the study. Two male patients in Group A rated as slightly improved by both doctor and nurse at the end of Phase III maintained this improvement at the end of the study. None of the males in this group was rated as being worse at the end of either Phase III or at the end of the study.

The clinical evaluation of the women in Group B at the end of Phase III shows 2 female patients much improved. At the end

of the project, after being put back on the placebo, 1 of these females was described by both the doctor and nurse as being worse. Of the 5 females in this group rated as slightly improved at the end of Phase III, there was agreement on the slight improvement of only 2 of these 5 at the end of the study.

At the end of Phase III one male patient in Group B was rated as being slightly improved by both doctors and nurses. At the end of the project 2 patients were rated as showing slight improvement. None was rated as being worse.

To sum up, 1 male patient in Group A was rated as much improved; 4 patients in Group A, 2 males and 2 females, were rated as slightly improved and 4 female patients in this group were rated as having become worse. In Group B, 4 patients, 2 male and 2 female, were rated as slightly improved and 1 female patient in this group was rated as having become worse.

PSYCHIATRIC EVALUATION

1. The Wittenborn Psychiatric Rating Scale and the Wittenborn Chronic Supplemental Scale showed no significant improvement or deterioration in either treatment or placebo group between their baseline and final evaluations.

2. The Standard Mental Status—Chronic Schizophrenia Profile consists of a checklist for items in categories such as personal appearance, observable behavior, emotional behavior or affective processes, speech and intellection or thought processes. Of the 115 items appearing in this form, 4 were found to be of statistical significance when comparisons were made of patients' profiles on the baseline and final evaluations.

An item described as "irrelevant responses to questions" showed some significant improvement in the treatment group, of whom 10 patients, 5 men and 5 women, showed improvement.

In an item rating ability to obtain and maintain attention, significant improvement was found in 5 patients in the drug group. This improvement appeared in 4 females and 1 male.

In an item evaluating inappropriate affective responses, a significant improve-

ment was found in 9 patients in the treatment group. Six of these were females and 3 were males. A partial explanation for this factor of apparent improvement may be found in the high incidence of extrapyramidal symptoms among the female patients.

In an item evaluating vagueness of verbal response a significant increase was noted in both treatment and placebo groups. Twenty-four patients, 13 in the placebo and 11 in the treatment group, showed an increase of this symptom.

DISCUSSION

This study was designed, in part, to ascertain the feasibility of using a state hospital setting and regular staff personnel on a research project in conjunction with a central Bureau of Research. The central Bureau of Research provided certain facilities and services which cannot be maintained by the average state hospital. It provided assistance in research design, periodic review of the evaluations made by the hospital staff and facilities for data processing. Biometric departments and special laboratory facilities needed in this type of research cannot be provided by most state hospitals whose main concern is the care and treatment of patients.

The hospital staff continued with its normal routine duties in addition to conducting the evaluations for this study. The staff personnel involved had been working on these wards for 6 months to one year prior to the beginning of this study. We therefore eliminated the influencing factor of introducing new personnel to our study group.

The patients were allowed to remain in their accustomed environment and were not transferred to a special research ward or

building. Those among the mildly withdrawn patients who had been previously assigned to ward duties and occupational therapy were continued in these activities. Medications were given to these patients at the same time as medicines were given other patients. We thus minimized the effects of special attention and so lessened the distinction between our research patients and the rest of the ward population.

Our research indicates that it is not necessary to maintain a special ward or building for research. It was quite possible to select patients and maintain them in their accustomed environment with no undue disruption of ward routine. The fact that behavioral disturbances showed no increase during the baseline study indicates that it is possible to eliminate all chemotherapy for a period of 3 months and still maintain patients in their usual environment. The use of regular ward personnel in research procedures was also proven feasible. However, it does require careful selection of such personnel on the basis of interest, responsibility and reliability.

With our experience of having 4 or 5 separate rating periods at which times we used 4 different rating scales, it became clear that a major need is for revision of our present tools for evaluating chronic schizophrenic patients.

SUMMARY

Our results indicate that minimal results were obtained from the use of this drug in our study of 47 patients.

The study has also indicated that the design and methodology used in this research provided an acceptable basis for collaboration between a central Bureau of Research and a state hospital staff.

CERTIFICATION IN CHILD PSYCHIATRY UNDER THE AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY¹

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In February, 1959, the American Board of Psychiatry and Neurology made an important decision for the entire field of American psychiatry. They gave formal recognition to child psychiatry as a sub-specialty in psychiatry and implemented this decision by appointing a committee of 6 psychiatrists who were recognized as experienced in this field. This committee was responsible for setting up standards and procedures for the certification of those psychiatrists who met the minimal standards of experience and training. It was clear from the outset that this committee of 6 was to function within the framework of the parent board. It is not an independent group, but as I shall bring out, the committee has had the full and wholehearted support of the Board, and has been free to set up its standards under which it has functioned. The committee wishes to give particular credit to the leadership of Dr. Francis Gerty, who, as President of the Board, played such an important part in bringing this to fruition, and to Dr. Boyd whose work with this committee has been invaluable in guiding us in getting underway.

This decision gave a new and important professional status to child psychiatry. It was preceded by a long and, at times, turbulent process. A belief was held by many psychiatrists that child psychiatry was not a sub-specialty and that any well trained psychiatrist was, by this fact, to be regarded as competent in all phases of practice. The need for special training, therefore, was not widely accepted. Many psychiatrists feared that the recognition of a sub-specialty would weaken and fragment the profession. The opposite will result from the decision of the American Board if this decision has the full support of qualified child psychiatrists and is responsibly administered.

A brief statement of some elements in the

history of child psychiatry may help to a better understanding of some of the honest doubts and questions that had to be settled before the Board could take this action.

Influences from many sources, medical and non-medical, gave impetus to the need to gain and apply in clinical settings a deeper understanding of the childhood period and the emotional problems that arose. Some of these forces emerged out of the more dynamic psychiatry which recognized that adult disturbances were rooted in the early period of life. The childhood period was presented through the disturbed perspective of the adult patient. Important as this was, there was a growing awareness that the child, living and growing in a family, needed to be understood out of himself and that clinical facilities had to be set up to help him and his parents.

Other forces were in action: changes in child welfare practices, developments in new educational procedures and more enlightened procedures in our Juvenile Courts. All served to heighten the need for developing new procedures and a different type of clinical setup. The work of Healy in Chicago, stressing the need to understand the individual, opened up another need, *i.e.*, for a real collaboration between professional groups, the psychologist, the social worker, the psychiatrist, the pediatrician. Each of these professions needed to find an effective way of working together, all pooling their separate skills to gain a deeper understanding of the child, not as an isolated person, but as a living, adapting, growing organism. This type of real collaboration was new in those days and around this fact developed many of the resistances to child psychiatry as a sub-specialty. Clinics were under suspect of being social agencies and not medical facilities.

The Commonwealth Fund of New York entered this new and exciting field in the early twenties working through the National Committee of Mental Hygiene. They sponsored the development of special clinics to diagnose and heal the emotionally disturbed

¹ Read at the 116th annual meeting of the American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

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child and her family. While the early emphasis was on delinquency and its prevention, the clinics soon developed a broader purpose.

These clinics, designated as "Child Guidance Clinics," provided the first opportunity for the professional collaboration of the different disciplines. But it is significant that while these clinics emerged out of community concerns and less out of hospitals or medical schools or existing psychiatric services, they did turn to the medically trained psychiatrists for leadership. In those early days, there were no trained child psychiatrists; they had to grow with this infant field.

However, these clinics have provided over the years the first organized training program. They have joined hands in a National Association to develop clinic standards and have gradually determined what is needed for the training of professional personnel, especially the psychiatrists.

Gradually the field of child psychiatry began to emerge and as more psychiatrists were trained in special skills, the move that culminated in the decision of February, 1959, began to have more impetus. Within the American Psychiatric Association new developments furthered the recognition of this field. One of the earlier committees in this organization included in one group, the problem of the mental defective and the growing field of child psychiatry. Both fields with their interrelated interests needed special attention and the Committee of child psychiatry was formed.

The Group for the Advancement of Psychiatry, when first formed, had a committee on prevention and included all the interests of child psychiatry. The resistances encountered in setting up a special committee on child psychiatry served to indicate the extent of a belief that there was no special field. This committee was formed over the protests of many.

The thoughtful reports coming from G.A.P. and from the deliberations of the APA Committee on Child Psychiatry have played an important part in giving professional status to this field. When the Council of the APA finally approved its Committee's report that this was a specialized field needing special training for psychia-

trists, a real barrier was removed which cleared the way for the decision of the American Board.

Child psychiatry has been influenced by developments in the psychoanalytic field with the emphasis on child analysis. In turn, the developments in child psychiatry have influenced this related field. Together they have moved ahead to a deeper understanding of the child both as a biological and a social being, growing up in a family.

As our clinics for the emotionally disturbed children refined their techniques, they have come into closer affiliations with other medical facilities, particularly pediatrics. The relation between these two medical specialties would require a separate paper. It was not an easy relation but the maturing of both, each operating out of its own professional opportunities, has brought them into closer relation to each other.

This is a brief statement of how child psychiatry has emerged and how it now has the professional status of a psychiatric subspecialty. The committee appointed to implement this decision is having a hard but a rewarding task. This will be a report of a year's activity:

The first requirement for certification is that the applicant be a diplomate of the American Board. This is essential as we are not setting up Child Psychiatry as a separate profession. All those certified to date, with a few outstanding exceptions, have met this basic requirement.

The committee has been operating on the following requirements for 2 classes of applicants. Those whose major interests and activities, prior to 1950, have been with children and adolescents, may apply for certification on record and without examination. The committee has made every effort to be fair and liberal in evaluating their experience and training before 1950 and to date has certified 110 on this basis. Since the committee is concerned with those candidates currently in this field of practice, we have required that those who were previously in this field and who left it for other professional work, should indicate in this application that they have returned to this field for at least 2 years preceding application. The committee reserves the right to withhold certification on record for those

whose qualifications are in doubt, and recommend them for certification after successfully passing the examination. This group has presented many difficulties to the committee which has made every effort to be fair.

The second group of candidates are those who have completed *acceptable training* since July 1950. This is an approximate date. For example, those who completed their training in September would be accepted for examination. The committee has accepted a 6-year sequence: 2 years' training in basic psychiatry, 2 in child psychiatry, and 2 for experience. Those psychiatrists in the 3-year training programs required by the American Board of Psychiatry and Neurology may spend one of those years in child psychiatry in a training program approved by both Board and committee. Each candidate is individually evaluated on the basis of the competency of his training. Then with the additional year of approved residency training in child psychiatry and with the required 2 years of experience, the applicant will be eligible for examination.

The committee had the difficult but important problem of determining how credit could be given for pediatric training. The committee recognized the importance of pediatric training for a child psychiatrist, without making this training mandatory, which some pediatricians wanted. The committee has stated that it is desirable that psychiatrists have, as a part of their training, experience in pediatrics. In October 1959, 2 members of the child psychiatry committee, the President and the Executive Director of the American Board of Psychiatry and Neurology, met with 3 representatives of the American Board of Pediatrics. A full day was given to the discussion of this problem, focusing on the question of whether pediatric training could be substituted for the 2 years of training in basic psychiatry. The child psychiatry committee held to the importance of basic psychiatric training and agreement was reached finally on the following basis: those candidates who have had 2 years of appropriate pediatric training can offer such training as experience. This means that an applicant with this training will take 2 years of basic psychiatry and 2 years of child psychiatry and be eligible for

examination. This represents an important concession of the American Board of Psychiatry and Neurology who have agreed to admit these candidates to the basic examination in order to become a diplomate.

The committee also agreed to have a representative from the American Board of Pediatrics serve as a full member on the child psychiatry committee, as a non-voting member. Dr. Hughes has served in this capacity.

In carrying out its responsibility the committee considered the type of examination that should be set up. The decision was to start with a written examination to be followed by an oral. Two written examinations have been held in different parts of the country; 105 were approved for this examination, 73 have taken it. We found that the written examination needed to be followed by an oral and have allowed all who took this first part to take the second. The oral examination was held in Chicago, April 25 and 26, with the following results: All 73 child psychiatrists who had taken the written examinations took the oral examination and 58 were passed as qualified.

After the oral examination was completed, the committee discussed the problem of giving both a written and oral examination. The value of the dual system could now be objectively studied after a full discussion. The committee concluded that the oral examination covering the following 6 areas was most comprehensive: 1. Normal growth and development; 2. Clinical problems of the pre-school child; 3. Clinical problems of the school-age child; 4. Clinical problems in the adolescent period; 5. Inter-professional and community relations; and 6. History of, and literature in, child psychiatry.

Comparing the results of the 2 examinations, the committee has decided to drop the written examination and give in future only the oral.

Another important assignment to the committee is the evaluation of every training facility in the United States offering training in child psychiatry. To do this, the committee has drawn up an application form which has been sent out to all known facilities stating the purpose of the questionnaire and inviting them to make application to the committee if they felt they were qualified

and wanted to be considered as an approved training facility. The committee hopes to get a full quota of requests. If this happens, we will have the most complete list of training facilities, so much needed if the training listed by applicants is to be appraised for the training they have had.

As the facilities are approved by the committee, more will be accomplished. Training facilities in child psychiatry will become a recognized part of the extensive medical network in the various specialities under the Medical Specialities Board. We anticipate having the assistance of the Council of Medical Education and of hospitals in this endeavor. To further this, the committee has

prepared a brochure which will be accepted by the medical speciality board as the basis of an inspection. We have been in a sound position to make clear what constitutes a good training program.

The fervent hope of the committee is that all qualified child psychiatrists in this country will avail themselves of the opportunity to join the family of certified child psychiatrists. By doing so, they lend important support to this move to give professional status to this growing field. Each one applying makes this move more effective and insures the future of our important field of professional practice.

A STUDY OF THE RELIABILITY OF THE MENTAL STATUS EXAMINATION^{1, 2}

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The primary problem in psychiatric research often revolves around the reliability of the psychiatric evaluation of the patients. Unless different psychiatrists will agree as to the clinical characteristics of these patients, any other studies done with the intention of relating them to these characteristics become incapable of comparison. For instance, it is useless to study the blood sugar levels in schizophrenics if a significant degree of agreement cannot be reached as to who is schizophrenic and who is not. The present study was conducted as part of a large research investigation of schizophrenia carried out under the joint auspices of the University of Michigan and the Ypsilanti State Hospital; and was aimed towards an inquiry into the factors influencing the reliability of the psychiatric examination.

RECORDING OF DATA

The frame of reference most commonly used by psychiatrists in evaluating their patients, particularly in a state hospital setting as in the present case, is the mental status examination. Outlines for such examinations are to be found in practically every textbook of clinical psychiatry, as well as in several volumes dealing expressly with this subject. It was therefore considered wise to begin our inquiry within this standard

framework. Consequently, a form was prepared which incorporated the majority of items included in the mental status. This form underwent several revisions as the result of clinical trials with its use, and as it was finally developed and used in this study, it included, in addition to the usual mental status items, various items pertaining to certain psychodynamic questions regarding the patient's personality, defense mechanisms, etc.⁷

In constructing the form, attention was given to the problem of recording data in a way which would enable it to be coded and processed by the IBM 650 digital computer. Needless to say, without the services of the computer the vast number of correlations involved in a study of this sort could not have been attempted.

It was necessary, then, to reduce the mental status items to a series of questions calling for concrete statements, in contrast with the usual clinical method of describing the mental status characteristics in narrative fashion. Two major approaches to this problem presented themselves, and it was decided to incorporate both approaches in the current form in order to permit an examination of the relative effectiveness of each in the clinical setting.

The first approach involves framing the questions in terms of degree of magnitude of a trait or characteristic, and calls for a judgement of the relative intensity of presence of such characteristics along a linear numerical scale (Figure 1).

There are many items of the conventional mental status which cannot readily be treated in this fashion, either because they are absolute (such as male *vs.* female) or mutually exclusive comparisons (again male *vs.* female), or represent a choice between

¹ Read at the 116th annual meeting of the American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

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⁷ As finally adopted, the form included 30 scale items and 29 categorical items which were also used in a form to score Rorschach data on these patients. Comparison of Rorschach and Psychiatric scorings will be reported elsewhere (Vandenberg & Rosenzweig, 1960).

FIGURE 1

Examples of Scale Items				
1. Liability of Affect				
1	2	3	4	
hyper	normal	blunted	flat	
2. Extent of Interpersonal Contact				
1	2	3	4	5
gregarious		normal		seclusive
3. Tension				
1	2	3	4	5
relaxed	tense	restless	agitated	tremulous

This is the usual "rating scale" approach, and the items treated in this fashion in the present study will be referred to as "scale items."

statements not linearly related (such as facial expression and participation in interview) (Figure 2). Some items could have been presented in terms of a linear scale, but it was felt that the frequency of their occurrence was limited or questions of intensity were not sufficiently relevant to warrant the expansion of the form and total number of questions necessary to include them as "scale items."

Thus, a series of questions was prepared calling for categorical judgements regarding the presence or absence of certain characteristics (yes-no judgements) or selection of the single most appropriate statements from among several alternatives offered (multiple choice judgements). Items presented in either of these two forms will be referred to in this paper as "categorical items."

In addition, the form called for an expression by the psychiatrist of his confidence in the accuracy of his own judgement regarding each item. This rating proved

impractical in actual use, however, creating undue difficulties in the recording of data, and was therefore dropped from the study.

Altogether, there were 37 numerical scale items and 52 categorical items (36 yes-no, and 16 multiple choice), calling for a total of 89 individual judgements.

METHOD AND RESEARCH DESIGN

Three psychiatrists participated in the study. Each is Board certified, and each has intensive experience with the types of patients studied. Two of the psychiatrists are on the staff of the State Hospital, though neither had direct responsibility for the care of any of the patients in the study. The third psychiatrist is on the staff of the University of Michigan, and had no prior contact with any of the patients.

Prior to the present study, the psychiatrists used the original form and its subsequent revisions (including the final form) in trial runs with a number of randomly selected patients, until each felt familiar and comfortable with its use. No attempt at constructing a scoring manual was made, but questions of clarity or semantic problems arising out of the use of the form were discussed between the psychiatrists before beginning the study proper.

The study was conducted as follows: A number of male patients between the ages of 20 and 50 were selected at random from the hospital rolls. From this pool, patients were selected who, on the basis of review of their hospital records and questionnaires completed by their ward physicians, met the following criteria:

FIGURE 2

Examples of Categorical Items (Multiple Choice)	
1. Participation in Interview	
_____ a. Cooperative, spontaneous, attentive	
_____ b. Apathetic, withdrawn, preoccupied, poor contact	
_____ c. Hesitant, guarded or evasive	
_____ d. Negativistic or abusive	
_____ e. Overdependent	
_____ f. Distractable	
_____ g. Not determined	
Examples of Categorical Items (Yes-no judgements)	
2. a. Disoriented for time	yes _____ no _____ ???
b. Bizarreness of thinking	present _____ absent _____ can't say

1. Over two years in the hospital.
2. Would be expected to remain in the hospital at least 60 days more.
3. Were free from severe somatic illness that would disqualify them for biochemical study.

4. Were sufficiently cooperative to take psychological tests, collect their urine, etc.

This selection procedure, conducted by persons not participating in the Mental Status Study and without consultation with the psychiatrists, was continued until a total of 50 patients was available.

Each of these patients was then seen by the group of 3 psychiatrists sitting together. During these sessions, one psychiatrist served as interviewer and conducted the examination. The other two were non-participant observers. The role of interviewer was rotated so that each psychiatrist served in this capacity for approximately one-third of the patients. Before the patient was brought to the examining room, a summary of his history was read aloud by the interviewer from the patient's hospital chart. Immediately after the patient left, each psychiatrist completed the rating form independently and without consultation with his colleagues. The average length of the interviews was 30 to 40 minutes. The average time taken to complete the form was 5 minutes.

After a period of 6 weeks, 30 of the patients were re-interviewed using the same procedure. This time the patients were selected so that 10 had previously been interviewed by psychiatrist A, 10 by B, and 10 by C.

The role of interviewer was now rotated so that each psychiatrist interviewed 10 patients, half of whom had previously been in-

terviewed by one of his colleagues, and half by the other. The selections and rotations were accomplished beforehand by persons unconnected with the examinations, who knew nothing of the patients or the previous scorings, nor even which psychiatrist was A, B, or C.

After all the ratings were completed, the data were coded upon IBM punch cards, and two types of computations were made. Agreements between all the ratings made on each item (inter-rater agreements), and agreement of each psychiatrist with himself on each item over the two interviews (consistency scores) were calculated. The significance of the obtained agreements and consistency scores on the categorical items were calculated by comparing against chance expectation using the Chi squared method. For the scale items, the Pearson product moment correlation coefficient (r) was used to compute significance.

RESULTS AND COMMENT

A. Comparison of scale items vs. categorical items: For purposes of this study a p value of 0.1 was considered significant. Breakdowns were calculated for p values of 0.05, 0.02, 0.01 and 0.001 (see Figure 3). A comparison of the number of significant agreement and consistency scores on scale items vs. categorical items reveals a better than 0.10 chance agreement on 17 of the 37 numerical scales, while for the categorical items only 14 out of 52 scores reached this level. Thus, almost half of the agreements on the numerical scales were within the significant range, while only slightly more than a fourth of the categorical items showed this level of significance. The consistency scores show a similar pattern.

FIGURE 3
Significance of Categorical and Scale Items

P	SCALE ITEMS		CATEGORICAL ITEMS	
	AGREEMENT	CONSISTENCY	AGREEMENT	CONSISTENCY
.001	5	2	1	1
.01	10	5	2	1
.02	0	2	5	1
.05	0	5	3	3
0.10	2	1	3	4
All Levels	17	15	14	10
Total Items	37	37	52	52

As can be seen from Figure 3, the distribution according to levels of significance also strongly favors the numerical scale items. These findings indicate that reliability is significantly affected by the kind of rating technique used, and suggest that numerical scales are to be preferred over categorical judgements.

B. *Difference between raters*: An examination was made of the scoring of each item by each psychiatrist over the 50 patients. No individual scoring biases were noted. Further, the correlations on 30 numerical scales,⁸ were averaged after Z transformation (see Figure 4). This method also indicated that there were no systematic differences between the raters. These findings suggest that disagreements in rating tend to arise sporadically in individual situations, and do not tend to follow a pattern indicative of an individual rater's prejudice, background, or orientation.

In determining the reliability of the men-

FIGURE 4
Index of Agreement and Consistency for the
Ratings on 30 Numerical Scales

FIRST INTERVIEW			SECOND INTERVIEW		
A ₁	B ₁	C ₁	A ₂	B ₂	C ₂
	47 ^a	54	48	—	—
B ₁		50	—	34	—
C ₁			—	—	51
			A ₂	59	67
			B ₂		53
			C ₂		

^a These were scale items that appeared on both the psychiatric and Rorschach rating forms.

tal status examination it is necessary to know not only whether the psychiatrists' ratings will agree with each other, but whether the same psychiatrist will rate the same phenomenon the same way each time.

It was primarily to attempt an answer to this question that the consistency scores were obtained. Since these were chronic hospital patients, it was expected that their clinical picture would remain fairly constant over the 6 week interval of the study. At first glance, noting that the consistency scores are lower than the inter-rater agreements, one might conclude that this assumption was false.

A closer consideration of the results, however, gives pause to this line of reasoning. For we notice that on those mental status items which are least stable (lability of affect, predominant mood, facial expression, participation during the interview, etc.) we get a significantly high consistency. That is to say, those characteristics most likely to vary seem to vary the least. This would suggest that the population is in fact, unusually stable in its clinical characteristics, as had been expected.

This still leaves the question of the poorer showing in consistency as compared with inter-rater agreement scores (see Figure 5).

A comparison of inter-rater agreement scores (IRA) with consistency scores (C) reveals 4 possible categories:

1. High IRA
High C
2. High IRA
Low C
3. Low IRA
High C
4. Low IRA
Low C

FIGURE 5
High Agreement — High Consistency Items

CATEGORICAL ITEMS		SCALE ITEMS	
ITEM	IRA P	ITEM	C P
Diagnosis	.001	Organization of thinking	.001
Participation in interview	.01	Level of intelligence	.001
Facial expression	.02	Reality testing	.01
Sensorium	.02	Verbal productivity	.05
Hallucinations	0.02	Self evaluation (work role)	.05
Predominant mood	0.05	Lability of affect	.01
Impaired recent memory	0.10	Psychomotor activity	.01
Bizarreness	0.10	Insight	.01
		Ego Strength	.01
		Gait	.01
		Rate of Speech	.05
		Concreteness of thinking	.05
		Appropriateness of affect	.01

When the values are high for both, the reliability is good all round, and need not concern us for the moment. When the values are low all round, we must assume that in a stable population, there are items about which (for one reason or another) there is too much uncertainty within each psychiatrist to permit reliable scoring. Where consistency is high but IRA is low, we would expect that we were dealing with terms about which each psychiatrist feels clear, but about which there are differences between the psychiatrists because of individual bias or other factors. Since it has already been indicated that individual rating bias is minimal, we would expect that the number of instances of high

C and low IRA would be small, and in fact this is the case for only 5 items (see Figure 8).

We may next consider those items on which there was high IRA but low C. (Figure 7)—This situation would imply that the psychiatrists were able to agree among themselves as to what they observed, but apparently observed different characteristics at each of the two interviews. Still assuming a stable population, one could account for these differences if one considered the psychopathology of the patient to have aspects which are not on the surface, but must be elicited by the psychiatrist during the examination. Thus, if a patient were delusional, assuming the psy-

FIGURE 6
Low Agreement (IRA) - Low Consistency (C)

CATEGORICAL ITEMS	SCALE ITEMS
Posture	Depth of affect
Speech Defects	Tension
Attitude in interview	Personal concepts used
Specific amnesia	Objectivity of concepts
Patchy memory defects	Symbolism
Confabulation	Extent of interpersonal contact
Distortion in thinking	Type of interpersonal contact
Word salad	Attitude toward others
Systematization of delusions	Conventionality
Preoccupations (8)	Degree of fantasy life
Neurotic symptoms (7)	Type of fantasy life
Sexual conflicts	Object relationship
Direction of aggression	Suggestibility
Denial	Frustration tolerance
Regression	Ability to postpone gratification
Regression	Impulse control
Direction of orientation	Social self evaluation
	Rapport

FIGURE 7
High Agreement - Low Consistency Items

CATEGORICAL ITEMS	SCALE ITEMS
Voice	General vs. Specific concepts
Sensorium	Level of interpersonal contact
Orientation for time	Self evaluation (sexual)
Delusions	Self evaluation (Intellectual)
Body image	

FIGURE 8
Low Agreement - High Consistency Items

CATEGORICAL ITEMS	SCALE ITEMS
Circumstantial speech	Type of aggression
Remote memory impairment	Rigidity
Personality characteristics	

chopathology remained present throughout the period of the study, it would remain for the psychiatrist to draw the patient into talking about or otherwise demonstrating the delusions. If the interviewer is successful, then the pathology is manifest during the interview and all psychiatrists can agree as to its presence; if the interviewer does not elicit the pathology, all psychiatrists can agree that this finding was not demonstrated during that particular interview. An inspection of the 9 items falling into this category reveals that they are for the most part traits which would not be ordinarily expected to change markedly over a short time, but are all of a type requiring elicitation by the psychiatrist. It is suggested therefore, that while there were no consistent individual differences among the psychiatrists as raters, there were differences in approach to the examination, which determined whether or not certain aspects of psychopathology were elicited during a given interview. In other words, while reliability was not significantly influenced by individual bias in interpretation of concepts or by individual capacity to make observations it was significantly influenced by individual differences in interviewing technique.

Turning attention now to those items which demonstrated poor IRA and poor consistency (Figure 6), the interpretation of results becomes more difficult and calls for an analysis of the particular items involved.

Space does not permit detailed review of such an individual analysis here, but the following factors have been suggested as a result of our examination of these results.

a. Some of the items are of such infrequent occurrence that the chance expectation is abnormally high (since chance expectation is based on frequency distribution). Thus, even 99% observed agreement is in several cases not better than chance, and hence not significant.

b. Some items are dependent upon categorical yes-no judgements, where slight differences between raters as to where to draw the cut-off line result in great differences in scoring. Such items would fare much better if presented as numerical scales.^a

c. Some items call for completely subjective emotional responses of the raters

(predominant mood, depth of affect, direction of aggression, object relationship, impulse control, etc.). That is, in order to evaluate the patient's trait, the psychiatrist must examine his own emotional response to this trait. Personality differences between the psychiatrists, day to day changes in emotional responsiveness, personal problems, etc., all would tend to affect reliability of such ratings adversely.^a

d. Certain items are poorly constructed or ambiguous (posture, predominant attitude in interview, general direction of orientation, suggestibility, level of regression) or call for information about the patient not readily available from the interview situation (extent and type of interpersonal contact on the ward, degree of fantasy life, etc.). In such cases discriminations could not be made reliably under any circumstances.

e. A number of the poor agreements suggest that some concepts in common clinical usage, which are usually taken for granted as being universally understood, are in fact unclear. This may be true for items on the form dealing with memory impairment, systematization of delusions, autistic vs. realistic concepts, symbolic thinking and autistic fantasy. There appeared to be considerable uncertainty as to what constitutes neurotic symptoms in a group that was for the most part psychotic, as well as to how much concern indicates a patient is preoccupied with a given thought. It may well be that some of the basic concepts in psychiatry require close scrutiny if communications between psychiatrists are to be at all meaningful.

For us, the most interesting finding was the high number of instances giving high IRA and high C values. It may be noted that this group also contains several items which may be considered as vague concepts (i.e., ego strength, insight, reality testing), and the question arises as to why

^a This point is well illustrated by the following: In the present study, "anxiety" was an item classified as a neurotic symptom, to be scored by "yes-no" judgement. IRA and C were both below chance. In a subsequent study, anxiety was scored alone along an 8 point scale. Six raters, rating 21 patients, showed agreements in their ratings at a .001 level of significance.

these poorly defined items fared so well while others were so poor in their reliability. We can only speculate. Perhaps there is less clarity regarding the clinical expressions indicative of autism, say, than regarding the clinical manifestations of impaired reality testing. Perhaps the psychoanalytically derived concepts have become more familiar and are better understood than the traditional, more descriptive ones.

Finally, we may consider diagnosis. This reached a .001 *p* value even though a categorical item.¹⁰ There were a number of disagreements with the diagnosis carried on the patient's chart, but the panel of psychiatrists in this study agreed between themselves 96% of the time. This in itself is rather remarkable, and suggests some sort of common diagnostic framework at least shared by these 3 psychiatrists. The fact that diagnostic agreements far exceed agreements on subitems may indicate that the diagnostic formulation was made independent of at least most of the specific criteria appearing in the form.

SUMMARY

A mental status rating was developed incorporating two major scoring techniques: the linear scale; and categorical judgements on yes-no or multiple choices.

Using this form, 50 chronic hospitalized patients (over 2 years in the State Hospital) were evaluated independently but simultaneously by 3 Board-certified psychiatrists, one of whom served as interviewer, and the other two as non-participant observers. The role of interviewer was rotated, each psychiatrist interviewing approximately one-third of the patients. After a 6-week interval, 30 of the patients were re-evaluated by the same psychiatrists, each patient having a different interviewer than before.

The obtained agreements on ratings of each item, as well as comparison or ratings of each psychiatrist with himself on first and second interviews (consistency scores), were calculated. The significance of the agreement and consistency scores was eval-

uated using the Pearson product moment correlation coefficient (*r*.) for scale items, and by comparing against chance expectations by Chi squared (X^2) for categorical items. Several thousand calculations were performed using the IBM 850. The data breakdown was designed to demonstrate the effects upon reliability of differences between interviewers, differences between raters, changes in patients over time, and the limitations of the rating methods.

CONCLUSIONS

1. Scale items fared consistently better than categorical items, with better than .10 chance agreement on 17 of the 37 numerical scales but on only 14 of the 52 categorical items. The consistency scores were similar. These findings indicate that reliability is greatly affected by the kind of rating technique used, and suggest that numerical scales are to be preferred.

2. There were no systematic differences between the raters.

3. Items normally expected to be unstable (e.g., facial expression, participation in interview, affective lability), showed very high consistency over the two interviews, suggesting that these patients did not change very much during the 6 weeks interval, as was to be expected since the population consisted of chronic hospitalized patients.

4. Certain normally stable items (e.g., projection, delusions, defective orientation), while showing good agreement between raters at each examination showed poor consistency between examinations, suggesting that different interviewers may tend to bring out different manifestations of psychopathology in the patient, which then are recognized by all raters with good agreement.

5. Breakdown of scores on specific items revealed some unexpected discrepancies which are difficult to interpret, but may suggest a need to re-examine the operational definitions of some psychiatric concepts usually taken for granted.

6. Agreement on diagnosis exceeded a significance level of .001.

¹⁰ The question called for a yes-no judgement regarding schizophrenia vs. not schizophrenia.

A DAY CARE CENTER IN A STATE HOSPITAL¹

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Day care of the mentally ill within the community, in a hospital setting but without isolation from home, family and community, has grown in popularity over the past 10 or 12 years.

It was around 1938 that Dr. Helen Boyle began admitting psychiatric patients to a general hospital in Hove, England. About 1945 Dr. Joshua Bierer started experimenting in the same direction, in his attempt to extend the principles of "social psychiatry" to the everyday treatment of patients.

The first day hospital was set up in 1946, by Dr. Ewen Cameron, at the Allan Memorial Institute, Montreal, Canada. Five years later, a similar day hospital was created by Dr. Moll, as part of a psychiatric ward at the then new Montreal General Hospital. Both proved to be outstanding successes and, in 1954, the first night center was established at the Montreal General Hospital. In 1951, an extensive plan for day care in connection with large mental hospitals was set up in St. John's, Newfoundland.

The day hospital plan in New York State was first proposed in the "Nine Point Program" published in October, 1955, by the Commissioner of the Department of Mental Hygiene, Dr. Paul Hoch. This program called for the establishment of 2 day hospitals, one in Brooklyn and the other in Poughkeepsie. The purpose of the Brooklyn setting was to serve selected patients attending the Brooklyn after-care clinics, all of whom are on convalescent care from state hospitals. The Poughkeepsie unit, however, was to concentrate more on community-type referrals drawn from a "random segment of population." These day hospitals were set up as independent state pilot projects, with their own budgets and organizations. This was, so far as we are aware, the first deliberately organized and planned ef-

fort by a state hospital in this country to provide day care on a non-selective, comprehensive basis.

The Poughkeepsie psychiatric day hospital opened July 2, 1956, in the Hudson River State Hospital, under the neutral name of "Day Care Center." Despite its location on the grounds, the administration thought it important at that time to dissociate the service in the public mind from the state hospital, and the center was given its own separate quarters, entrance, staff, and special stationery. Although basically independent, the center depends upon state hospital diagnostic facilities such as X-rays and laboratory services.

The center is located in a self-contained wing, partitioned into space units for offices and various types of therapy. The treatment area includes the somatic unit, with 10 beds for sub-coma insulin therapy and recuperation from electroshock treatment, plus facilities for recreational and occupational therapies. The library, with a stage setting for psychodrama, serves also for group psychotherapy and staff conferences.

The staff of the Day Care Center consists of: 2 psychiatrists, 2 psychiatric registered nurses, 10 psychiatric aides, 1 psychiatric social worker, 2 occupational therapy instructors, 1 recreational instructor, 1 half-time clinical psychologist, and 1 stenographer-receptionist.

Most of the staff members were recruited from the local state hospital, and although the majority had years of experience with mentally ill patients, initially they were given a 6-week training course, to prepare for the specific requirements of this new facility. In-service training has been continued with bi-monthly team sessions, at which the patients' behavior, problems, achievements, etc., are discussed and new admissions presented.

The center is open from 8:00 A.M. to 4:30 P.M., Monday through Friday. Anyone over 18 within commuting distance can apply for treatment. There is no commitment; no compulsion of any kind. Patients

¹Read at the 116th annual meeting of the American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

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are referred by physicians, clinics, agencies, and occasionally by the Court. Self-referrals are accepted, if suitable, as are patients discharged from the state hospital who are still rather ill and in need of intensive treatment.

No particular distinction is made as to the type of illness, as the operational structure and staffing permit treating the seriously ill. Experience has shown that the contraindications for day care need be few, although grossly disturbed, highly aggressive or greatly destructive patients should not be admitted. The screening process selects patients who can be helped in a day setting, whose admission to a state hospital may thus be prevented. The screening process is also used to refer patients for help to other agencies, mental health clinics, counsellors, etc.

In practice, the majority of patients screened out are those considered suitable for fully ambulatory treatment and not ill enough to warrant admission for day hospital care. It is a rare patient who is considered too ill for day care, provided the family is able to offer supervision the rest of the time. The liberal intake policy has been justified by a complete absence of suicidal attempts or seriously aggressive acts. Seriously ill patients with potential for such behavior are given emergency attention and placed under treatment the day of referral.

The Poughkeepsie day hospital offers a comprehensive treatment program tailored to the needs of the individual patient and his particular problem. Treatments available include ECT, sub-coma insulin treatment, and all forms of psychotherapy, ranging

from intensive techniques to directive and supportive. Group therapy is widely practiced. Pharmacological and physical methods are used, when necessary, as adjunctive to individual needs. The program also includes social casework, and therapeutically oriented occupational and recreational activities. There are no fixed rules about the therapies—timing, duration or overall length. There are, moreover, no fixed rules about patients' stay at the center. The majority of newly-admitted patients attend 8 hours a day, 5 days a week. As improvement takes place this is commonly reduced to 3 days a week or less, finally tapering off to supportive sessions once or twice a month.

The treatment program is not limited to the patient; it also involves his family. A quite successful therapy program with relatives is carried out at the center on weekdays and Sundays by the psychiatric social worker. Planned, structured sessions held with individual families and with groups contribute greatly to better understanding of the patient's emotional problems by his family.

In the first 3½ years, there have been admitted to the day care center 508 patients from 650 applications processed. Of the 142 deferred cases, some lacked motivation for treatment; others did not fit into the program. Many were referred to agencies, counsellors, clergymen and mental health clinics. A few were grossly disturbed, highly aggressive and destructive patients who would have disrupted the normal course of family, community or facility life.

Schizophrenic reactions range from the

TABLE 1
Diagnostic Distribution

	NO. OF PATIENTS	PERCENTAGE
Psychoneurotic disorders	161	31.7%
Schizophrenic reactions*	138	27.1%
Involutional psychotic reactions	77	15.2%
Transient situational personality disorders	39	7.7%
Chronic brain disorders	29	5.7%
Personality disorders	29	5.7%
Affective reactions	21	4.1%
Unclassified	6	1.2%
Acute brain disorders	5	1.0%
Mental deficiency	3	.6%
Total	508	100%

pseudoneurotic to the psychotic. We believe these cases are suitable for sub-coma insulin treatment in a psychiatric day hospital, and that their chance of resocialization in a propitious atmosphere is relatively good. The members of the involuntal group show most gratifying results, from ECT in particular.

TABLE 2
Source of Referrals

	NO. OF PATIENTS	PERCENTAGE
Physicians	185	36.4%
Self-referrals	176	34.6%
Other sources	40	7.9%
Mental health clinics	39	7.7%
Area agencies	36	7.1%
State hospitals	32	6.3%
Total	508	100%

Referring physicians include psychiatrists in private practice. These totals speak for the highly gratifying relations with the community's local private psychiatrists, general practitioners and agencies.

TABLE 3
Dangerous Tendencies

	NO. OF PATIENTS	PERCENTAGE
Latent suicidal	84	16.5%
Overtly suicidal	48	9.4%
Highly disturbed	11	2.2%
Homicidal tendencies	8	1.6%
Total	151	29.7%

Most of these patients with dangerous tendencies are commonly thought to require detention in a state hospital. Most of these have responded to treatment, and there have been no tragedies.

TABLE 4
Age Distribution

GROUPINGS	NO. OF PATIENTS	PERCENTAGE
18-29 years	125	24.6%
30-39 years	158	31.1%
40-49 years	94	18.5%
50-59 years	61	12.0%
60-69 years	11	2.2%
Total	508	100%

Sex Distribution

Male	183	36.0%
Female	325	64.0%

The relatively small geriatric group is a reflection of our admission policy of taking in only patients who are in need of treatment, not custodial care. Since the establishment of the center, the female admission rate has remained consistently twice the male rate.

TABLE 5
Length of Treatment

	NO. OF PATIENTS	PERCENTAGE
Less than 3 months	212	50.7%
3-6 months	128	30.6%
6 months-1 year	47	11.3%
1-2 years	28	6.7%
Over 2 years	3	0.7%
Total	418	100%

TABLE 6
Case Loads

YEARS	AVERAGE MONTHLY CENSUS	AVERAGE NUMBER IN FULL PROGRAM*	AVERAGE DAILY ATTENDANCE
1956-1957	50	12	10
1957-1958	72	18	14
1958-1959	84	24	26
1959-1960	94	62	35

* Average number in attendance from 1-5 full days a week.

The sustained increase in number of patients in attendance at the center is gratifying evidence of community acceptance. It is also somewhat dismaying to see case loads so rapidly approaching the maximum capacity of the center, and to be faced with the prospect of having to set up a waiting list.

TABLE 7
Condition on Discharge

	NO. OF PATIENTS	PERCENTAGE
Much improved	147	48.7%
Improved	50	16.5%
Slightly improved	51	16.9%
Unimproved	54	17.9%
Total	302	100%

By the rather rigorous criteria used, almost half the patients were restored to a good level of functioning and 82% showed some degree of improvement. Not included are an additional 116 admitted but not

treated; some of these were withdrawn, after screening, by families who felt unable to accept responsibility to care for the patients outside of hospital. Others failed to report for treatment, and some were admitted only for study and referral.

TABLE 8
Treatments Applied

	NO. OF PATIENTS	PERCENTAGE
Electro-convulsive therapy	97	19%
Sub-coma insulin therapy	68	13%
Drug therapy	217	42%
Individual psychotherapy	341	67%
Group Psychotherapy	185	36%
Occupational therapy	434	85%
Recreational therapy	483	95%

Somatic therapies, including ECT, insulin and drugs, have been used much more liberally than is usually the case in ambulatory practice. This reflects the type of case material—major psychoses and acutely ill psychoneuroses considered much too ill for office treatment.

CONCLUSIONS

The main objective of the Day Care Center was a pilot demonstration of the extent to which day care could substitute for and supplement hospitalization in the care of the mentally ill, while also establishing a closer relationship with the community. The psychiatric day hospital has proven a most successful practical application of psychiatry to the community care of these patients. It is our conviction that such a setting, serving a large number of severely ill patients, constitutes a most efficient and readily acceptable way of providing help for the mentally ill, since it maintains contact with home, family and community throughout the period of treatment, thus avoiding hospital dependency and regression, and easing readaptation to outside life.

Community acceptance of psychiatric treatment on a day-care basis has exceeded all expectations. The understanding and

good will generated are given not only to the center, but also to the parent hospital, the Department of Mental Hygiene, and psychiatry in general, and the original efforts to dissociate the day service from the state hospital are no longer necessary.

The project has demonstrated that it is possible to treat effectively and safely in a day hospital many patients so ill that they would be hospitalized, were this service not available. It has unquestionably prevented many an admission to the state hospital. It would be tempting to promise a consequent reduction in state hospital admissions, but this would be naive. The fact is that hospital admission rates in the area served by the day center have gone up sharply to the highest level in history, and higher than in any other county in the state during the period of the center's operation. It is our impression, however, that there has been a significant reduction in the number of chronically disabled mentally ill, which can be related to the effectiveness of the hospital program in general and of the day hospital in particular. Other studies now in progress should yield documentation of this impression at a later date.

SUMMARY

1. A day hospital was opened at the Hudson River State Hospital on July 2, 1956.

2. The day center treats seriously ill psychotic and psychoneurotic patients, including those with dangerous tendencies.

3. Since the opening, 508 patients have been admitted and the number under treatment is increasing steadily.

4. Physicians have referred 36.4% of the patients, and 34.6% were self-referrals.

5. There are few clinical contraindications to day hospital treatment.

6. Patients and their families readily accept psychiatric treatment when offered on a day basis.

7. Day care is a safe and effective method of treating many seriously ill, and is particularly valuable in that it maintains contact with home, family and community, and avoids hospital dependency.

THE STUDY OF MOTOR DEVELOPMENT IN INFANCY AND ITS RELATIONSHIP TO PSYCHOLOGICAL FUNCTIONING¹

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There has been a growing interest in the role which organic factors may play in a wide variety of psychiatric disorders in children, although these disorders are not associated with structural abnormalities of the brain. The development of techniques for studying specific disturbances in children with known organic brain disease, has made it possible to study similar mechanisms in children with milder handicaps in which the etiology is still obscure.

Immaturity and poor organization of functions under control of the central nervous system can be seen in tests of motility (3), perception (1, 4, 10, 25) and intelligence (27) and in the EEG (18). Disorders of these functions, similar to those in children with known brain damage, are found in many children with language (6) and reading disabilities (5, 23, 24), and in a large number of children whose behavior disorders are accompanied by less specific impairments, but who resemble brain-damaged children in their hyperactivity, impulsivity and low threshold for anxiety (9, 19, 26). Similar disturbances in motility, perception and intellectual functions are also found in some children with schizophrenia, but in this condition the dysfunctions are marked by the changing and erratic qualities peculiar to this illness (2).

Organic factors may be investigated in infancy as well as in childhood and later life. Gesell demonstrated many years ago that children with organic brain damage can be diagnosed in the first months of life on the basis of disturbances in motor and adaptive development (16). Using the Gesell examination, the author found that there were abnormalities of neurological maturation as early as 1 month of age in an infant who later developed clinical

schizophrenia. This infant showed a disorganized postural development, with a retardation to less than 50% of normal, followed by an acceleration of $2\frac{1}{2}$ times the normal rate, and an abnormal scatter between different aspects of development at any one examination. These features were accompanied by disturbances in alertness, physical growth, and autonomic functions (12). Milder developmental disturbances were found in 3 infants who developed behavior disorders, which were much more severe than any seen in the remaining infants who showed no developmental disturbances in infancy (11). Data from this study and retrospective studies of schizophrenic children indicate that there is no fixed neurological defect during infancy, but rather a disorder of the timing and integration of neurological maturation. It was hypothesized that poor integration of early neurological development in infants with schizophrenia is a more primitive manifestation of the same underlying disorder of integration that is manifested in adult schizophrenics by the disorganization of complex psychological functions (13).

The current study analyzes the histories of children with a variety of psychiatric disorders, to investigate whether any correlation exists between abnormal neurological development in infancy and psychological functioning in later childhood. With all the inaccuracies of a history taken 3-8 years after the fact, would it be possible to find any relationship between disturbances of early motor development and the level of later intellectual functioning, and the type and severity of psychopathology?

METHOD

The 85 children used for this study represent 90% of the children under 12 who were treated in the author's private practice in the last 7 years. A detailed history of pregnancy, birth and early development was obtained by the author as part of the

¹ Read at the 116th annual meeting of The American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

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initial psychiatric history. The child's history, as recalled by the parents, was supplemented whenever possible by data recorded during infancy in obstetrical and pediatric records, and in baby books and dated snapshots.

The initial evaluation of each child included psychiatric and neurological examinations by the author, and complete psychological testing.³ Younger children were given the Gesell Developmental Tests and the Stanford-Binet; older children were given the Wechsler Intelligence Scale for children and the Bender-Gestalt test, in addition to projective and academic tests.

Each child was diagnosed as having schizophrenia, organic brain disease or primary behavior disorder. Of the 28 children diagnosed here as being schizophrenic, 24 were independently diagnosed as schizophrenic by other psychiatrists. One additional child was diagnosed "psychosis with mental deficiency" elsewhere. The 6 diagnoses made here of organic brain disease were also independently confirmed for 5 of the children; the 6th had been reliably diagnosed as suffering from cretinism in infancy, and had responded to thyroid medication. The remaining 51 children were diagnosed as having primary behavior disorders. Only a few of these children were ever seen by other psychiatrists.

The rating of abnormal neurological development in infancy was limited to an analysis of postural development and locomotion, since this was the only area in which adequate data were available. The extremely important development of fine coordination is almost never recalled or recorded by anyone, including pediatricians. Abnormalities of alertness and activity were recalled by some parents, but the observations were too subjective to compare in different subjects.

Postural development was first analyzed for single deviations from Gesell's norms (16). Single landmarks were rated as "accelerated," if the child acquired a skill so early that his development at that point was 140% of normal; similarly, landmarks were rated as "retarded," if the skill was

acquired so late that development was only 70% of normal (Table 1). Single deviations of this type are a fairly frequent occurrence and were considered to be minor abnormalities. Only a series of 2 or more such retardations was considered to be a "major deviation." Early postural development was also considered to show a major deviation, if it exhibited the type of longitudinal irregularity which had been found in the earlier studies of schizophrenic children (13). Thus, a major irregularity was noted, if the child's development showed both retardation and acceleration, one after the other. The underlying disturbance on which attention was focused was a disturbance of the integration of development, rather than merely slow or fast development. It was assumed that development is disorganized, if it is "out of step" with itself, and shows marked changes in rate or changes in the usual sequence of postural control, as opposed to development which merely deviates from the statistical norms. In the direct studies of development, it is also possible to measure the spread between different aspects of postural development on each examination, and the spread between postural development and fine coordination (12). The data in the current study, obtained by history, were not detailed enough for such an analysis and could only be rated for gross longitudinal irregularities (Table 1).

TABLE 1
Standards for Rating Postural Achievements
(age in months)

	ACCELERATED (140%)	AVERAGE	RETARDED (70%)
RAISES HEAD (in prone)	1/2	2	3
ROLLS (supine to prone)	3	5 1/2	8
SITS (with support)	4 1/2	6 1/2	9
STANDS (hold- ing on)	6 1/2	9	13
WALKS (without support)	9	13	19

RESULTS

When the children in each diagnostic category are divided according to I.Q., all

³ The author is indebted to Florence Halpern, Ph.D., and Joan Havel, Ph.D. for the psychological testing.

of the severe disturbances in intellectual functioning occurred in the groups with schizophrenia and organic brain disease (Table 2). Of the 28 schizophrenic chil-

TABLE 2
Distribution of I.Q.'s in Each Diagnostic Group

	UNDER 70	70-90	OVER 90	TOTAL
Organic Brain Disease	3	2	1	6
Schizophrenia	11	9	8	28
Behavior Disorder	0	0	51	51

dren, 11 had I.Q.'s under 70, 9 had I.Q.'s between 70 and 90, and only 8 had I.Q.'s above 90. Five of the 6 children with organic brain disease had I.Q.'s under 90, 3 of them under 70. In contrast to this, all of the children with primary behavior disorders had I.Q.'s over 90. Since all 85 children came from families with average to superior intelligence and educational background, and were not exposed to environmental conditions which might depress intellectual functioning, their I.Q.'s tend to reflect the severity of their psychopathology.

Poor integration between various intellectual functions also occurred more frequently in the groups with schizophrenia and organic brain disease (Table 3). More

TABLE 3
Incidence of "Scatter" Between Verbal and Performance Scores

	SCATTER (10 POINTS OR MORE)	NO SCATTER	TOTAL
Organic Brain Disease	6	0	6
Schizophrenia	24	4	28
Behavior Disorder	23	28	51

than 10 points difference between Performance and Verbal scores on the WISC (or Adaptive and Language scores on developmental testing) was taken as the measure of abnormal "scatter." All of the children with organic brain disease showed this degree of scatter, as did all the schizophrenic

children, except for 4 with I.Q.'s under 70. Less than half of the children with primary behavior disorders showed marked scatter.

In Table 4 the incidence of each type of motor development is indicated for each diagnostic and I.Q. category. Major irregularities in development, with both retardation and acceleration, occurred most frequently in schizophrenic children with I.Q.'s under 70. However, this type of irregularity also occurred in 2 children with milder psychological dysfunction. One was a schizophrenic boy of average intelligence; however he was the only one of the bright schizophrenic children who had been considered bizarre since he first entered school. The other was a hyperactive girl with average intelligence who had always had moderate anxiety and who developed a school phobia at 9 years of age. She was considered to have a behavior disorder of only moderate severity.

Multiple retardations occurred most frequently in the children with organic brain disorder, but also occurred in schizophrenic children with I.Q.'s under 90. The degree of early motor retardation was comparable in the 2 groups.

Single (e.g., "minor") deviations occurred in 25-33% of the children of each diagnostic category (Table 4). Two-thirds to

TABLE 4
Distribution of Deviations in Motor Development

	ORGANIC BRAIN DISEASE	SCHIZOPHRENIA IQ UN- DER 70	70-90	OVER 90	BEHAVIOR DISORDER
Major Irregu- larity	4	0	1	1	
Multiple Retarda- tion	2	1	0	0	
Single Devia- tion	4	5	1	17	
No Devia- tion	1	1	3	6	33

three-fourths of the children with average intelligence had no history of deviations in motor development, regardless of whether their diagnosis was schizophrenia or primary behavior disorder.

Although grossly irregular and retarded motor development occurred most frequently in the schizophrenic children with the lowest I.Q.'s, almost half of these children regressed after a history of relatively minor motor deviations. At any time from 8 to 30 months of age they became withdrawn and spoke less, if language had been present. These regressions were usually marked by diminished activity. Parents stated "he seemed to lose life," "moved less," "slept more," or "moved more slowly." However, when this change in motor activity was not accompanied by any gross loss of established postural control, it was not reflected in the quantitative scoring.

Except for 2 children with organic brain disorder, there was no association of serious complications of pregnancy or delivery with the major deviations of motor development. The complications which were considered to be significant included bleeding or toxemia during pregnancy, prematurity, erythroblastosis fetalis and neo-natal cyanosis. Such complications occurred in 7 children with histories of normal motor development or only a single deviation; (2 schizophrenic children with I.Q.'s of 85 and 100, and 5 children with primary behavior disorders). Complications during pregnancy and delivery did not occur in any of the children with schizophrenia or behavior disorders who had major deviations in postural development; however, the mothers of 2 of them had virus infections (mumps and "flu") at the time they delivered.

DISCUSSION

In a study such as this, where data on early development were obtained by history, the presence of an abnormal history is more significant than the absence of such a history. One cannot know how many of the children with negative histories would have shown minor or major deviations, if their development had been examined carefully during infancy. A study based on historical data is obviously subject to many distortions. The positive histories were checked through other sources, but it was not possible to make any correction regarding the negative histories for the complex factors which caused some parents to notice less,

or to forget more, than other parents. The child's age when the history was obtained, seemed to make little difference; as many histories of early deviations were obtained on children who were older than 6 years as were obtained on younger children.

The number of negative histories would also tend to increase, since the analysis of deviate development had to be limited to the one variable of postural control. Such a method misses neurological deviations that show up in the scatter of postural development or in disturbances of alertness, autonomic functions, physical growth and the development of fine coordination and visual motor organization. Analysis of any single function, such as postural control, will miss disturbances of neurological integration, when the major effects are in these other areas. A complete study of early integrative capacity can therefore be made only on the growing infant; the study of his history will yield only fragmentary data.

In view of the limitations of the method, it is noteworthy that it was possible to pick up histories of significant deviations of early motor development, not only in half the children with organic brain disease, but also in a number of schizophrenic children. These motor deviations indicate that there is some involvement of the central nervous system in certain schizophrenic children before the age of 2 years, although later on they do not show any gross motor dysfunction. Neurological involvement that was severe enough to be reflected in a history of disturbed motor development occurred more frequently in the schizophrenic children with I.Q.'s under 70. Clinically these children showed the features of early infantile autism. Follow-up studies on this sub-group of schizophrenic children show that the course of the child's illness appears to be almost completely independent of the external influences of parents, schooling and psychiatric treatment, and to depend almost entirely on whether the child retains any inner capacity for further development (7). One might say that these children with the most severe form of childhood schizophrenia show the greatest preponderance of constitutional factors, on the basis of the fol-

low-up studies. The importance of constitutional factors may also be reflected in their neurological deviations in the first 2 years of life.

Pollack and Goldfarb have shown that even over 6 years of age there are more signs of neurological dysfunction in schizophrenic children with lower I.Q.'s (below 80-90). More of the children with impaired intellectual functioning showed abnormal postural and vestibular responses(22), persistent errors on the Face-Hand test (21) and confused orientation as to time and place(20). These studies of school age schizophrenic children indicate that disturbances in integration that are severe enough, to interfere with intellectual functioning, also tend to be associated with disturbances in motor and perceptual functions. The present study suggests that this disturbance of neurological integration starts before 2 years of age in many of these schizophrenic children with severe impairments in later psychological functioning.

The ability to define sub-groups of childhood schizophrenia in terms of different developmental patterns and specific impairments in function is essential for clinical management of these children. Psychiatric treatment must be based on a realistic appraisal of the child's prognosis. The child's educational program must be geared to his intellectual capacities and to his particular disturbances in perceptual, visual motor and language functions. Frequently methods used in training brain damaged children are helpful, when adapted to the special problems of the schizophrenic child(17). The degree of intellectual impairment not only limits the effectiveness of psychological measures, but it may also affect the degree of response to physiological measures(14).

However, the existence of important clinical differences between sub-groups of schizophrenic children does not necessarily mean that these differences arise from different etiological factors. The schizophrenic children with lower I.Q.'s and more evidence of neurological disturbance may merely represent a more severe variant of the illness. There was no evidence in this study that prenatal or paranatal complications

contributed to this more severe picture, but obviously much larger studies are needed to decide this point.

The fact that some schizophrenic children shift from more severe to less severe clinical pictures and vice versa(2, 8) tends to substantiate the concept of an illness with courses of varying severity(15). In this study several children who showed relatively little neurological disturbance in the first year of life, regressed shortly thereafter so that they resembled the children with severe disturbances in the first months of life. The opposite type of course also appeared in 2 children with major deviations in the first year; one developed a schizophrenic psychosis, but functioned intellectually in the average range (though well below his normal sister), the other showed a clinical picture later that was indistinguishable from the other children with primary behavior disorders. In an earlier study of developing infants, 3 infants who had milder deviations similar to those of a schizophrenic infant, showed behavior disorders in later childhood that were much more severe than those of the normally developing infants studied by the same methods(11).

The data suggest that rather than any absolute division of schizophrenic children into those with and those without central nervous system involvement, there may be a spectrum of varying degrees of developmental disturbance. Similar factors may even be involved in the lower threshold for anxiety in some children with primary behavior disorders. Environmental factors would be relatively less important, the more severe the intrinsic tendency to poor integration of development. Whereas with milder intrinsic disturbance, environmental stress or support would play an increasingly important role. The severity of later impairments would depend on such critical factors as the timing and duration of early neurological disturbances, and whether the child's environment tended to exaggerate or to counteract his particular difficulties.

SUMMARY

The analysis of early postural development and locomotion can be used as one measure of the integration of central nerv-

ous system maturation in the first 2 years of life. Using this index, involvement of the central nervous system was found in the histories of half the children with organic brain disorder and half the children who had severe schizophrenia with defective intellectual functioning. However, there was no absolute division of children with schizophrenia or primary behavior disorders into those with and without evidence of early neurological disorder. It is suggested that there may be a spectrum of developmental disturbances and that the severity of these may be related to the difficulties some individuals experience in maintaining psychological integrity in the face of stress.

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CLINICAL NOTES

(The Clinical Notes report the findings of the authors and do not necessarily represent the opinions of the Journal.)

STUDY OF BUTYRYPERAZINE (BAYER 1362)

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AND PAUL RAJOTTE, M.D.¹

Butyrylperazine(1) was found to be more potent and to produce fewer disabling side effects than thioperazine(2). This report deals with the use of 3-n-Butyryl-10 (3' dimethylaminopropyl) phenothiazine in 20 acute and chronic psychotic female patients from 4 to 74 days.²

The setting (a therapeutic community) has been described in detail elsewhere(3). The multiple observer technique was used.

The patients ranged in age from 18 to 56 years, with 16 between 30-49 years. Eighteen were schizophrenics and 2 suffered from a manic-depressive psychosis. Eleven patients had 1 to 4 previous hospitalizations; 7, 5-8; and 2, 10-13.

The duration of treatment was 4 days in 1 patient; 10-29 days—4 patients; 40-59 days—8 patients; 60-74 days—7 patients. The initial dose was 5 mg. q.i.d. I.M. in 14 patients. The final dose ranged from 5 mg. t.i.d. to 100 mg. t.i.d. (orally). Extrapyramidal reactions were noted in 8 patients; 5 complained of excessive drowsiness. There were few other side reactions. Hematologic or liver chemistry changes were not observed.

Four patients were much improved (one of whom relapsed subsequently); 4 were improved; 11 were unchanged; and 1 was worse.

The compound showed fewer toxic side effects than many other available drugs,

and patients did not complain of feeling like "lead." The drowsiness was not dose-related. The use of increasingly higher doses (300 mg. daily—4 patients) did not materially influence the end result. Neither dyskinesia nor other neuromuscular involvement was observed, contrary to other observations(1). Since acutely ill patients did not respond rapidly, it would seem that butyrylperazine has a slow onset of action. Patients discontinued from the drug relapsed, at times within 48 hours, suggesting a rapid excretion. Although many of the present group of patients were chronically ill, thioperazine achieved a substantially better result in a similar patient sample(4). The effectiveness of butyrylperazine appears to lie between chlorpromazine and the other piperazine phenothiazines.

We were unable, therefore, to confirm the German observations. In a review of the data with Professor Flugel and his collaborators, it was found that: 1) our highest dose (300 mg. daily) was approximately 10 times their maximum dose; 2) their incidence of extrapyramidal reactions was almost twice the present group; 3) dyskinesias occurred in 45% of their patients with none in our series; and 4) their improvement rate was in the neighborhood of 65-70%. This suggested that we were dealing with a different patient sample.

Our inability to confirm European findings with this drug, "Haloperidol" or "Taractan," has made it necessary to review the entire problem of drug evaluation as affected by genetic, socioeconomic, cultural and other factors. Little attention has been given to the setting in which drug trials are conducted. At the present time, our tentative hypothesis is that the apparently marked

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² Butyrylperazide (Bayer 1362) was provided through the courtesy of Dr. J. Sommer, Farbfabriken Bayer, Leverkusen, West Germany. The authors are grateful to Riker Laboratories, Northridge, Los Angeles, for additional supplies (Riker 595), as well as a generous grant-in-aid.

heterogeneity of the present patient population probably represents a genetically different biochemical reactivity in terms of each patient's response to treatment.

This problem is now being investigated jointly, through the use of matched samples, with Dr. D. Bente (University of Erlangen, Germany), and Dr. J. Collard (University of Liege, Belgium), and will be reported in greater detail at another time.

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PRELIMINARY REPORT ON TARACTAN

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Taractan² is 2-chloro-9-(3-dimethylaminopropylidene) thioxanthene. Although not a phenothiazine derivative, it is stated by the manufacturer to have tranquilizing potency similar to that of the phenothiazine compounds and also to exhibit antidepressant efficacy.

The drug was administered to 53 newly admitted patients. It was discontinued in 3 patients, leaving 50 cases for evaluation. They were all females, ranging in age from 16 to 70, with 58% in the third and fourth decades of life. Diagnostic classification is indicated in Table 1. Dosage ranged from

garded as "mixed type" and 1 as depressed. Of the 12 patients in these 2 diagnostic categories, 8, or 67%, were considered to have achieved a remission or much improved status, and 3, or 25%, were regarded as improved. It is apparent, therefore, that the drug exerts its greatest effect on patients with prominent affective components in their illness.

Of the 32 schizophrenic patients, only 2 were regarded as much improved and 3 as improved. The duration of present illness in these 5 patients was 1 year or less. In contrast, only 15% of the schizophrenics with

TABLE 1

Diagnosis	Total Number	Remission or Much Improved	Improved	Slightly or Not Improved
Schizophrenia	32	2	3	27
Schizo-affective	9	5	3	1
Manic-depressive	3	3	1	0
Involutional psychosis	4	1	1	3
Psychoneurosis	2	1	1	1
	50	12 (24%)	6 (12%)	32 (64%)

100 to 300 mg. daily, with 150 to 200 mg. as the most frequent daily dosage. The drug has been used for periods ranging up to 5 months.

Results are indicated in Table 1. It is evident that best results were obtained in the schizo-affective and manic-depressive groups. In the latter, 2 patients were re-

insignificant improvement had a present illness of less than 1 year. In 70% it was more than 2 years, and in 41% more than 5 years. As emphasized in a previous report(1), duration of present illness is a significant prognostic factor in schizophrenia. It should be indicated also that in the schizo-affective group, duration of present illness may have been a pertinent modifying factor, as in 67% of this group the present illness was less than 1 year. The sole patient in this group

¹ Newtown, Conn.

² Supplied by Hoffman-La Roche Inc., Nutley, N. J.

who failed to improve had been ill more than 5 years.

Of the 32 schizophrenics, 20 also received other ataractic drugs, either before or after Taractan or at a previous episode of illness. In 6 instances, other drugs produced a superior level of improvement, in 12 cases they were equally ineffective and in 2 the degree of improvement was similar.

Complications were absent and side-effects were few at the dosage level employed. As indicated, the drug was discontinued in 3 cases within a few days because of excessive somnolence or dizziness. In the group of 50 patients, there were 4 who complained of mild drowsiness, 1 exhibited some degree of restlessness and 1 had hypotension. Thus side-effects were definitely less than with

other drugs. One depressed patient, described briefly in a previous communication (2), who had experienced dizziness and fainting under Marplan and Tofranil, recovered uneventfully under Taractan.

CONCLUSIONS

It may be stated that Taractan appears helpful in patients who exhibit prominent affective components in their illness. It would seem to merit further study.

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A PILOT STUDY OF THE EFFECTS OF PATHCOLE, A SEROTONIN ANTIMETABOLITE, ON SCHIZOPHRENIC PATIENTS

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PURPOSE

Accumulated experimental evidence as assessed by Woolley(1, 2) suggests that errors in the metabolism of brain serotonin may be associated with such mental states as depressions, with a deficiency of serotonin, and acute psychotic states, with an excess of serotonin. In an effort to obtain more information in this area Shaw and Woolley(3) synthesized Pathcole (6-phenylamidino-1,2,3,4, tetrahydrocarbazole). This drug, a potent antagonist to serotonin exerting tranquilizing effects in laboratory animals, was well tolerated in preliminary trials on non-psychotic human beings.

The purpose of the present study was to investigate the effects of Pathcole on acutely disturbed schizophrenic patients.

EXPERIMENTAL DESIGN

Six acutely disturbed schizophrenic patients were selected, 3 females and 3 males,

age range 19 to 38 (average 26 years). Duration of illness was less than one year for 3 and no more than 5 years for the other 3. Two had been diagnosed as chronic undifferentiated schizophrenic and 4 of the paranoid type.

Their selection for this study was based on additional independent evaluations to establish the presence of fully developed acute psychotic states. All patients presented hyperactivity, confusion, incoherent and irrelevant thought processes, delusions and one or more of the following disturbances : hallucinations, ideas of reference, flight of ideas, inappropriate affect, disorientation.

PROCEDURE

The experimental design included 3 conditions :

Condition I : A 2-week observation period following the transfer of patients in the research wards. Although an adequate knowledge of the behavioral patterns of all 6 patients was already available for comparison with possible drug changes, condition I provided for a levelling of any behavioral

¹ From the Thudichum Psychiatric Research Laboratory, Galesburg State Research Hospital, Galesburg, Illinois.

changes the transfer to the research ward might have induced.

Condition II: A 5-week period under Pathcole during which a starting dose of 25 mg. daily was increased at the end of the first week to 25 mg. b.i.d. and was raised still further in accordance with individual progress until the dose of 25 mg. q.i.d. was reached for 3 patients while the other 3 attained the dosage of 25 mg. t.i.d. Pathcole was given for 5 weeks only because of our limited supply of that drug.

Condition III: A 4-week period under placebo.

At the beginning of condition I and at the end of conditions II and III respectively, the patients had physical examinations and in addition laboratory studies including CBC, urinalysis, and liver tests. Psychological examinations included a battery of 2 projective tests (Rorschach and Draw-a-Person), and 4 subtests from the Wechsler Adult Intelligence Scale (Information, Comprehension, Similarities, Digit Symbol). During all 3 conditions patients were interviewed weekly by 6 physicians for evaluation of mental status and observations of blood pressure, pulse, perspiration, dermatographism and reflexes.

RESULTS

Two patients, A and B, showed some improvement which lasted throughout condition III. Restlessness and psychotic symptoms decreased, rapport and behavior improved. Psychological tests showed increased motor coordination for A and in addition better relations with reality and less explosive expression of emotions for B. Patients C and D exhibited a shift of psychomotor activity toward normal limits and improved ward adjustment. In patient C this improvement was maintained throughout condition III with better relations with reality, less disruptive aggression, less explosive expression of emotions, decreased number of Rorschach responses and decreased motor coordination. Patient D, after the second week of condition III, became aggressive, disturbed and was not testable. Finally patients E and F showed some improvement during the third and fourth week

of condition II. Restlessness decreased, thought processes became somewhat organized, and affect improved. In the fifth week of Pathcole (25 mg. q.i.d.) they developed, however, a temporary turbulence-like stage including motor restlessness. Their previous psychotic symptomatology was accelerated as they became combative, unmanageable and were not testable.

The observed physiological changes were definite but did not show any specific correlation with the described clinical and psychological changes. All patients presented increased pulse rate (group mean rising from 92 to 112) and reflexes became more active (group mean from 1+ to 3+). Five patients revealed moderate increases of blood pressure (group mean from 109/74 to 137/88) and in only one case did blood pressure present no significant changes. Dermatographism increased in all patients. Idi muscular reactions appeared in the fifth week of medication in all patients. Perspiration exhibited variable changes. No side reactions were observed.

There is no direct evidence that Pathcole actually entered the brain, and with techniques now available it is not possible to decide this point. Thus the results of this clinical study can not be used to substantiate nor to eliminate the hypothesis that excess of serotonin in the brain contributed to acute psychotic states. The observed moderate temporary improvements might be interrupted in accordance with Woolley's hypothesis and point to the need of more extensive studies of serotonin antimetabolites.

SUMMARY

The effects of Pathcole on 6 acutely disturbed schizophrenic patients were studied and some temporary improvements of varying durations were observed in each patient.

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COMMENTS

NATIONAL ASSOCIATION FOR MENTAL HEALTH GOLDEN ANNIVERSARY¹

Fifty years ago Clifford Beers, with the encouragement and support of Adolf Meyer, William H. Welch, William James and others, established in New York City the National Committee for Mental Hygiene, which he served as secretary for many years.

Ten years ago, the National Committee merged with the National Mental Health Foundation and the Psychiatric Foundation to form the present National Association for Mental Health.

Clifford Beers had a long perspective and he foresaw growing through the years a great science-based humanitarian movement in the interests of mental health. To some of his friends, Mr. Beers' forecast seemed nothing less than visionary, but he lived to see his dream realized; and in 1930 he was the central figure in an international congress in Washington to which came delegates from more than 50 countries representing as many mental hygiene societies, to pay him tribute.

Now this great national society in its present enlarged form is 50 years old, with more than 800 affiliates and over a million members and volunteers throughout the country. The Report of the N.A.M.H. of its last year of the half-century gives a vivid picture of progress during those five decades, and of its present and continuing projects and activities.

¹ The manuscript of this comment, prepared last year, was lost sight of during the process of moving the editorial office.

Because of the importance of the events commemorated it is felt that it should be published even thus belatedly.

Ed.

This report makes good reading. It tells of the research program of the National Association under the direction of Dr. William Malamud whose views of how research should be conducted were set forth in his Presidential Address before the American Psychiatric Association in Atlantic City in May of last year. During 1959, the Research Committee of N.A.M.H. made grants amounting to \$119,418.00 to 15 research projects throughout the country. In addition, the Committee distributed \$108,700.00 granted for schizophrenia research by the Supreme Council of the 33rd Degree Scottish Rite Freemasonry Northern Masonic Jurisdiction for the year 1959. It will be recalled that during the past 26 years the Scottish Rite has provided more than \$1,500,000.00 for research in schizophrenia.

Following testimony before Congress by N.A.M.H. and other agencies the Federal Government appropriated \$68,000,000 to the National Institute of Mental Health for 1960. This compares with \$4,250,000 in 1948, since which date, appropriations for this purpose have steadily increased.

The Golden Anniversary Meeting of the N.A.M.H. last year in Philadelphia was the largest in its history with delegates from 41 states and Canada. At this meeting, tribute was paid to Dr. George S. Stevenson, retiring Director after 33 years of devoted service. He was presented with a massive testimonial volume containing letters of appreciation from government and psychiatric leaders throughout the world.

This historic Report of the National Association for Mental Health was appropriately introduced by its President, Mrs. A. Felix du Pont, Jr.

NEWS AND NOTES

DEDICATION OF THE HOUSTON STATE PSYCHIATRIC INSTITUTE.—The new building of the Houston State Psychiatric Institute for research and training in the Texas Medical Center was dedicated on February 3, 1961. The Institute is a division of the Texas Board for State Hospitals and Special Schools—C. J. Ruilmann, Director—and is closely affiliated with the Department of Psychiatry of Baylor University College of Medicine. W. T. Lhamon is Chairman of the Department and has been Director of the Institute since its formation 3 years ago.

The chief address at the dedication entitled "Service, Research and Survival" was given by Dr. Kenneth E. Appel. The dedication was made by Dr. Ruilmann and Dr. Lhamon.

At the banquet in the evening, Dr. Louis J. West gave an address entitled "The Challenge of Experimental Psychiatry." To Dr. Eugen Kahn, Professor of Psychiatry at Baylor University College of Medicine and consultant psychiatrist to the Institute, a scroll was presented in which his friends and colleagues acknowledged their indebtedness to him:

"For pioneering accomplishments in the earliest psychiatric institutes of Europe and America;

For wise counsel to the faculty of the Department of Psychiatry of Baylor University College of Medicine and the staff of the Houston State Psychiatric Institute;

For scholarly contributions as a teacher, clinician, scientist, and writer for which he is honoured throughout the world;

For the warm compassionate feelings toward his fellow men which bring to them inspiration, affection, and humor."

Both ceremonies and an open house were attended by several hundreds including members of the Texas legislature. Out of town guests included Dr. Robert L. Stubblefield; Dr. Hamilton Ford; Dr. T. H. Hill; Dr. Floyd Cornelison; Dr. Hugh C. Bledgett, Chairman of the Department of Psychology, University of Texas; Dr. Louis D. Cohen, Professor of Psychology, Duke University School of Medicine; Dr. Irwin J. Knopf, Psychologist, Southwestern

Medical School; Dr. William Hurder of the Southern Regional Education Board; Dr. Robert Sutherland, Hogg Foundation.

The new building is of advanced design and in its 70,000 square feet of space contains a 60-bed hospital, adult and child outpatient clinics and a day hospital. These will be used solely for research and training purposes.

Nearly half of the space is devoted to laboratories for biochemical, biophysical, neurophysiological, pharmacologic, psychologic and sociologic research. Staff members, who hold joint appointments in Baylor include John Kinross-Wright, Associate director, Neil Burch, William Boardman, Robert Edelberg, Seymour Fisher, Charles Gaitz, Sanford Goldston, James Knight, Irvin Kraft, and James Ragland.

AMERICAN ORTHOPSYCHIATRIC ASSOCIATION.—At the 38th annual meeting of the Association, Mar. 23-25, in New York City, Fritz Redl, Ph.D., became president for the year 1961-62.

Edward D. Greenwood, M.D., was named president-elect to take office in 1962, and Jules Henry, Ph.D., was elected vice-president.

EASTERN PSYCHIATRIC RESEARCH ASSOCIATION.—The sixth annual meeting of the Eastern Psychiatric Research Association will be held October 27 and 28, 1961 in New York City.

The theme of the meeting will be "Expanding Goals of Genetics in Psychiatry (1936-1961)."

Further information may be obtained from David J. Impastato, M.D., Secretary-Treasurer, 40 Fifth Ave., New York, N. Y.

THE INTERNATIONAL SOCIETY FOR CLINICAL AND EXPERIMENTAL HYPNOSIS.—The Society will hold its annual convention July 16-22 in Rio de Janeiro in conjunction with the Congresso Pan-Americano de Hipnologia and the Congresso Brasileiro de Hipnologia. The program will emphasize concepts and definitions of hypnosis, neurophysi-

ology of hypnosis, and medico-legal and ethical concepts in its practice. Those interested in attending or presenting papers can secure additional information by writing either : Oscar Farina, M.D., 1st Secretary, Brazilian Division ISCEH, R. Estados Unidos, F95, São Paulo, or David Akstein, M.D., President, Brazilian Society of Medical Hypnosis, Rua Cinco de Julho, 376, Copacabana, Rio de Janeiro, Brazil.

YALE UNIVERSITY SCHOOL OF MEDICINE POSTDOCTORAL FELLOWSHIPS IN PSYCHIATRY.—The Department of Psychiatry announces training fellowships focussed on laboratory work; training in clinical psychiatry is provided when required. The training is arranged to meet the specific goals and needs of each candidate.

Applications will be accepted from candidates with the M.D. or Ph.D. degree. Candidates from psychiatry should complete their second year of residency prior to their work on this program.

Stipends generally range from \$6500 to \$8500 per annum.

For further information write to Dr. Kenneth A. Chandler, Executive Director, Basic Science Program, Dept. of Psychiatry, 333 Cedar St., New Haven 11, Conn.

AMERICAN ELECTROENCEPHALOGRAPHIC SOCIETY.—The 15th annual meeting of the Society will be held at the Hotel Claridge, Atlantic City, June 9-11. The scientific program will include two symposia: 1. The Medicolegal Electroencephalogram, Dr. Isadore S. Zfass, chairman, June 10 at 2:00 p.m. 2. The Physiological Basis of Memory, Dr. Frank Morrell, chairman, June 11 at 9:00 a.m. All members of the American Psychiatric Association are invited to attend.

NATIONAL COUNCIL ON FAMILY RELATIONS.—The 1961 annual meeting of the NCFR will be held Aug. 23-25 at the University of Utah. The keynote address on "Difference, Tolerance, and Cooperation" will be delivered by Opert Tanner of the University of Utah, well known as a philosopher, great speaker, and world traveller.

Three plenary sessions will follow: "Eth-

ical Differences," "Ideological Differences," and "Religious Differences." Wallace Fulton, New York City, will act as moderator for the sessions.

EAST BAY PSYCHIATRIC ASSOCIATION.—The officers of this society for the year 1961 are as follows : President, Dr. Allen S. Mariner, San Leandro, Calif.; President-Elect, Dr. Lloyd Patterson, Berkeley, Calif.; Secretary, Dr. Melvin M. Lipsett, Berkeley, Calif.; Treasurer, Dr. Eric Plaut, Berkeley, Calif.; Elected as Councillor, Dr. John Visser, Berkeley, Calif.

A NEW UNIVERSITY POST.—President Clarence B. Hilberry of Wayne State University, Detroit, Michigan, reports the establishment of a new faculty post, the "University Professor" with its first incumbent Dr. John M. Dorsey who for the past 15 years has held the chair in psychiatry at his university.

It is understood that the duties of the new position will be quite informal. The University Professor will be able to maintain contact with students and teachers in the various departments with a view to presenting the educational process as a rounded whole rather than as merely the opportunity for the student to acquire information on a number of more or less isolated subjects in which he may find himself interested. A senior consultant, such as the new member of the faculty will be able to bring to the student both a new and broader concept of the learning experience, a wide humanistic view of what a university education can and should mean, both an outlook and an inlook on knowledge as the handmaid, though not a substitute for wisdom, leading in the direction of the ancient *nihil humani* tradition.

This new development at Wayne State University will be followed with much interest.

THE AMERICAN NEUROLOGICAL ASSOCIATION.—The 86th annual meeting of the American Neurological Association will be held at the Claridge Hotel, Atlantic City, New Jersey, June 12-14, 1961 under the

Presidency of Dr. Harold G. Wolff.

Information regarding the meeting may be obtained from the Secretary, Dr. Melvin D. Yahr, Neurological Institute, 710 West 168th Street, New York 32, New York.

INSTITUTE OF GENERAL SEMANTICS.—The 18th annual Seminar-Workshop in General Semantics—the first West-Coast Conference—will be held Aug. 12-27, 1961 at the University of California, Santa Barbara.

Enrollment limited to 60. Tuition, \$300 (includes registration fee \$30, which must accompany application). Room and meals for the period and the meetings, \$145. A few scholarships are available.

For information write to: Registrar, Institute of General Semantics, Cakeville, Connecticut.

SOCIETY FOR PSYCHOPHYSIOLOGICAL RESEARCH.—This new society will hold its first annual meeting in New York on Sept. 5 in conjunction with the American Psychological Association convention. The purpose of the society is to foster research on the somatic responses and their psychological relations in various academic disciplines including psychology, physiology, biology, psychiatry and instrumentation. All scientists interested in this research field are invited to attend the meeting and to consider membership. President of the Society is Chester Darrow, Ph.D., Institute for Juvenile Research, Chicago.

Details regarding membership and the program may be obtained from the Secretary, Albert F. Ax, Ph.D., The Lafayette Clinic, 951 East Lafayette, Detroit 7, Michigan.

THE AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY, INC.—The following were certified at New Orleans, Louisiana, Mar. 18, 20 and 21, 1961:

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 Mayer, Richard F., M.D., Boston, Mass.
 Nelson, John Woolard, M.D., Memphis, Tenn.
 Thomas, Juergen E., M.D., M.S., Rochester, Minn.
 Toole, James F., M.D., Philadelphia, Pa.
 White, Joseph Courtney, Jr., M.D., Philadelphia, Pa.

DEATH BY SUGGESTION.—Theodore X. Barber, Ph.D., writing in *Psychosomatic Medicine* (March–April 1961), considers reports of various forms of “voodoo death” among nonliterate people and concludes that black magic, sorcery, or suggestion have not been demonstrated to be the direct cause of such deaths; that some reported cases were apparently due to poison or organic disease, that in some instances the victim, believing death to be inevitable because of sorcery, refused food and water and died of starvation and dehydration; that the hypothesis that such death may be due to overstimulation of the sympathicoadrenal system or of the parasympathetic system is premature.

WISCONSIN PSYCHIATRIC INSTITUTE.—The Institute and the Department of Psychiatry, University of Wisconsin Medical Center, will sponsor a 3-day interdisciplinary research conference, August 29–31, 1961 on “The Physiological Correlates of Psychological Disorders.” Topics will include adrenocortical function during anxiety, psychophysiological problems, psychological factors in cardiovascular responses, and others.

Accommodations will be in lake front dormitories. Interested scientists and their families are cordially invited. Inquiries may be addressed to: Coordinator of Postgraduate Medical Education, The Wisconsin Center, 702 Langdon St., Madison 6, Wisc.

DR. BLAIN HONORED.—The Southern California Psychiatric Society at its annual meeting Apr. 29, 1961, presented a scroll to

Daniel Blain, M.D., Director of the Department of Mental Hygiene, State of California, for his long record of important contributions to the field of mental health. Dr. Blain, an international figure in psychiatry, was the first medical director of the American Psychiatric Association, and served ten years in that capacity before assuming this present post in California.

EASTERN PSYCHIATRIC RESEARCH ASSOCIATION.—The 26th meeting of this Association will be held on June 22, 1961 at 8:00 p.m. at the New York University Medical School, 30th Street and First Avenue, New York City.

Topics: 1. “The First Organization of Ex-patients of a Psychiatric Hospital—25 Years Later,” Jacob Friedman, M.D., New York City. 2. “Ambulatory Maintenance Electric Coma Therapy in Chronic Mental Illness—a 10-year Review of 50 Patients,” Emerick Friedman, M.D., Albany, N. Y. 3. “Views and Practices in Psychiatric Pharmacology,” Brian C. Campden-Main, M.D., Arlington, Va.

PSYCHIATRIC FACILITIES IN ISRAEL, 1960.—In December, 1960, I visited Israel for a short stay of 2 weeks. I shall mostly detail facilities around the intellectual center of the country, Jerusalem, but first will sketch a few observations about psychiatry in the country as a whole.

Psychiatric patients in Israel are cared for as follows: 1. The Government maintains, by far, the most facilities; 2. There are private practitioners in psychiatry and psychoanalysis, although they seem to carry less of the total patient load than in the United States; 3. Some Psychiatric treatment is provided through the various Sick Funds, of which the largest is Kupat Holim, the Sick Fund of the General Labor Federation, (the Histadrut); 4. The kibbutzim singly and jointly provide for some of their psychiatric needs, for example, they maintain a Child Guidance Center at Oranim (see; Kaffman, M.: *Am. J. Psychiat.*, 117: 732, Feb. 1961); 5. The Hadassah Medical Organization carries out extensive programs of care; 6. Other privately supported or-

ganizations offer treatment, such as the American Joint Distribution Committee which cares for aged psychiatric patients in various parts of Israel.

The rest of my observations concern Jerusalem and its vicinity, which was the main focus of my visit. Several hospitals in the Tel Aviv area are described (*in* Klein, I. J.: *Am. J. Psychiat.*, 117: 459, Nov. 1960). In the Talbieh section of Jerusalem is the headquarters of the Israel Psychoanalytic Society (Dr. Erich Gumbel, President, M. Brandt, Secretary). It is an active organization, has a training institute, and includes members in the other cities of Israel. It holds some of its meetings and conducts part of its training program in Tel Aviv. Its members devote part of their time to psychiatry—Dr. H. Winnik is Director of the Talbieh Hospital and Dr. J. Schossberger heads the "Work Village"; Dr. Gumbel is Consultant to the Child Guidance Clinic of the Hadassah Medical Organization (The Albert and Mary Lasker Child Psychiatry Department).

The Government maintains a psychiatric hospital at Eitanim, near Jerusalem. This includes a children's ward with approximately 20, mostly autistic, patients. Of its roughly 100 beds for adults half are for acutely ill patients. Eventually it is planned to expand the hospital to 250 beds. The Government also operates for chronic cases a "Work Village" with emphasis on rehabilitation and provides funds for the care of patients in other hospitals, such as the custodial hospital at Ezrat Nashim, directed by the University professor of neurology, Dr. Halperin.

The Histadrut has its own psychiatric hospital in Jerusalem, the Talbieh Hospital, which includes an outpatient clinic, and supplies money for their members' visits elsewhere, such as to the Hadassah clinics.

Dr. I. Zellermyer is the head of the department of psychiatry, Rothschild Hadassah University Hospital and Hebrew University—Hadassah Medical School. The department includes an 11-bed inpatient service for research and teaching and an active outpatient division (for description see Moses, R., and Shanani, J.: *Arch. of Gen. Psych.*, 4: 60, Jan. 1961). Members of this depart-

ment, Drs. S. R. Moses and D. Hertz, are also consultants to the Institute of Criminology of the University. In a few months this department will move from its present scattered quarters to biblically historic Ain Karem, outside of Jerusalem, where rise the fabulous modern buildings of the new Hadassah-Hebrew University Medical Centre. Careful and thoughtful planning have produced what should be one of the most efficient as well as beautiful hospitals in the world today.

Hadassah also supports the Lasker Child Guidance Clinic, directed by Dr. Joseph Oren, who with Drs. Moses and Hertz, obtained part of their training in this country.

There are other small private hospitals in Jerusalem, and there still persists the former custom of caring for psychiatric patients in private homes. The Israeli Neuropsychiatry Association, of which Dr. Hertz is Secretary, has its headquarters in Jerusalem.

Though this is not a complete description of psychiatry in Israel, by focusing on various facilities I found in Jerusalem, I am implying that Israel has a level of psychiatry which compares favorably in many ways with other modern countries.

James A. Kleeman, M.D.
New Haven, Conn.

CANADIAN MENTAL RESEARCH REWARD AVAILABLE.—The Canadian Mental Health Association's National Mental Health Research Fund is now accepting applications for its annual Research Award, approximately \$25,000.

The recipient should reside in Canada and have appropriate scientific qualifications in any of the professional disciplines directly related with mental health or mental illness. The final selection of a candidate is the sole responsibility of the director of the Fund—Dr. Ray Farquharson, M.B.E., F.R.C.P., who is also director of the Medical Research Council in Ottawa.

Letters of application should be sent not later than June 1, 1961 addressed to: Dr. Ray Farquharson, Director, Mental Health Research Fund, Canadian Mental Health Association, 11½ Spadina Road, Toronto 4.

ANNUAL INDEX

This periodical is indexed alphabetically under both Subject and Author entries.

In searching for a specific article, the Author entry should be consulted if the name of the author is known, since the complete bibliographical reference is to be found only after the author's name. When there are two or more authors for an article the complete entry appears only under the name of the first author. Under the names of each of the joint authors a cross reference is made to the original author entry.

The same applies to book reviews, the complete title of the book being listed under the author's name in the list entitled Book Reviews in the Subject Index.

Titles under the Subject Index are often inverted or shortened, and when there are two or more authors, the name of only the first is shown. For the complete author reference, the Author Index should be consulted. The Subject Index covers original articles, biographical and historical materials, book reviews, in memoriams, and editorial comments.

Complete book titles are listed under Book Reviews in the Subject Index. Ed. indicates an editorial comment; H.N. a historical note; C.N. a clinical note; C.R. case report; A.N. administrative note; and Corr. correspondence.

SUBJECT INDEX

A

- Abstract Thinking: Modes of, and Psychosis;
N. McConaghy, 106, Aug. '60.
- Academic Lecture: A Sociologist's View on
Patient Care; Leo Simmons, 385, Nov.
'60.
- Administrative Psychiatry (Review of Psychi-
atric Progress, 1960); J. Martin Myers,
649, Jan. '61.
- Administrative Therapy: Principles of; D. H.
Clark, 506, Dec. '60.
- Adolescence:
In State Hospital; James F. Suess, 891, Apr.
'61.
- Mental Hospital Treatment of Troubled
Youth; Donald M. Hamilton, 811, Mar.
'61.
- Adolf Meyer Lecture: The Study of Defect;
Sir Aubrey Lewis, 289, Oct. '60.
- Age: See Geriatrics.
- Agranulocytosis: See Psychopharmacology,
Side Effects.
- Alcoholism:
Alcoholism (Review of Psychiatric Progress,
1960); Karl M. Bowman, 628, Jan. '61.
- And the Hypothesis of Reciprocal Comple-
mentarity; A. H. Hobbs, 228, Sept. '60.
- Obsessive-Compulsive Alcoholic; Edward
Podolsky, 236, Sept. '60.
- American Psychiatric Association:
Annual Meeting, 1960 (Ed.); 82, July '60.
- Committee Structure; 943, Apr. '61.
- 116th Annual Meeting, Atlantic City, N. J.,
1960 (Ed.); 253, Sept. '60.
- Official Reports:
Coordinating Committee on the Technical

- Aspects of Psychiatry (Ed.); 265
Sept. '60.
- Editorial Board Changes (Ed.); 82, July
'60.
- Professional Standards; 757, Feb. '61.
- Amsterdam, Holland: Municipal Psychiatric
Service; Paul V. Lemkau, 779, Mar. '61.
- Anesthetic in Shock Therapy (C.N.); William
Karliner, 355, Oct. '60.
- Animal Experimentation: Behavioral Changes
During Hypothalamic or Limbic Stimula-
tion in the Monkey; Lorne D. Proctor,
511, Dec. '60.
- Aortic Graft: And Electroshock (C.R.); A. H.
Chapman, 937, Apr. '61.
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Oct. '60.

B

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State Hospital Population (C.N.); Pan-
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Nov. '60.
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C

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 Chemotherapy: See Psychopharmacology.
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 Intra and Extramural; Maxwell Jones, 784, Mar. '61.

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 Associated with Anti-Depressant Drugs (C.N.); William L. Sharp, 458, Nov. '60.
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 Current Trends; Manfred S. Guttmacher, 684, Feb. '61.
 Cullen, Dr. William: On Mania (H.N.); Eric T. Carlson, 463, Nov. '60.
 Czechoslovakia: Psychiatry: Battlements and Bridges in the East; Jules H. Masserman, 306, Oct. '60.

D

- Day Center: In State Hospital; Leon A. Steiman, 1109, June '61.
 Demographic Study: Maryland; Anity K. Bahn, 769, Mar. '61.
 Depression:
 Chlorprothixine and Isocarboxazid in (C.N.); Harry F. Darling, 931, Apr. '61.
 Combined Pharmaco-Fever Treatment with Imipramine (Tofranil) and Typhoid Vaccine in the Management of (C.N.); H. E. Lehmann, 356, Oct. '60.
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Adenoma ; Martin M. Mandel, 234, Sept. '60.

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Dunton, William Rush, Jr. : Canadian Tribute ; Helen P. Le Vesconte, 751, Feb. '61.

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II

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Electroshock Therapy : *See* Shock Therapy.

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And Thyrotoxicosis (C.R.) ; Norman Sher, 840, Mar. '61.

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Epilepsy : *See* Convulsive Disorders.

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F

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G

Gambler, The (C.R.) ; Iago Galdston, 553, Dec. '60.

Gasoline : Sniffing (C.R.) ; R. V. Edwards, 555, Dec. '60.

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Adjustment of Eighty Discharged Geriatric-Psychiatric Patients ; Morse P. Manson, 319, Oct. '60.

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H

Hallucinations : Motor Function in Mentation ; Imagery and Hallucination ; The Independence of the Highest Cerebral Centers ; Max Levin, 142, Aug. '60.

Head Injuries : Psychophysiologic Sequelae of ; Arthur H. Auerbach, 499, Dec. '60.

Hepatitis : Prolonged Phenothiazine (C.R.) ; Bruce M. Bailey, 557, Dec. '60.

Heredity and Eugenics :

Genetic Factors in Schizophrenia (Corr.) ; 373, Oct. '60.

Heredity and Eugenics (Review of Psychiatric Progress, 1960) ; Franz J. Kallmann, 577, Jan. '61.

Psychiatric and Medicolegal Implications of

- Genetic and Endocrinologic Research in Sex Determination; Karl Bowman, 481, Dec. '60.
- Historical: Psychotherapy that was "Moral Treatment"; Eric T. Carlson, 519, Dec. '60.
- Hospital Community Service: In a State Hospital; Robert C. Hunt, 817, Mar. '61.
- Hurd, Henry: And the Johns Hopkins "Big Four" (H.N.); Jerome M. Schneek, 842, Mar. '61.
- Hypercalcemia: In Depression (Corr.); 1045, May '61.
- Hypercholesteremia: Control of, and Hyperlipemia in a Neuropsychiatric Hospital (C.N.); J. R. Shawver, 741, Feb. '61.
- Hyperemesis Gravidarum: Psychologic Factors and Psychiatric Disease in; Samuel Guze, 421, Nov. '60.
- Hyperlipemia: Control of Hypercholesteremia and, in a Neuropsychiatric Hospital (C.N.); J. R. Shawver, 741, Feb. '61.
- Hypotension: Associated with Thioridazine HCl (C.N.); David W. Swanson, 384, Mar. '61.
- I**
- India:
- College Student Indiscipline in (Ed.); 268, Sept. '60.
- Mysore State: Caste and Mental Hospital Admissions in; J. Hoenig, 37, July '60.
- Indiana: Certain Factors Influencing Utilization of State Hospital Facilities; John Nurnberger, 1065, June '61.
- Industrial Psychiatry: See Occupational Psychiatry.
- Infancy: Motor Development and Neurological Integration; Barbara Fish, 1113, June '61.
- In Memoriam:
- Victor Vance Anderson, 575, Dec. '60.
- Flanders Dunbar, 189, Aug. '60.
- Peter Frostig, 479, Nov. '60.
- William Gordon Lennox, 671, Jan. '61.
- Robert Bush McGraw, 851, Mar. '61.
- George Neely Raines, 190, Aug. '60.
- Insulin Therapy: Improving, with Neostigmine (C.N.); Amedeo Esposito, 1032, May '61.
- Insurance Papers: Diagnoses on (Corr.); 754, Feb. '61.
- Interdisciplinary Trends: In Psychiatry; Charles E. Goshen, 916, Apr. '61.
- Interhospital Research: In Chemotherapy; Eugene M. Caffey, 713, Feb. '61.
- Introspection (Ed.); 559, Dec. '60.
- Isolation: Some Psychological Aspects of Isolated Antarctic Living; Charles S. Mullin, Jr., 323, Oct. '60.
- Is Psychotherapy a Science? (Corr.); 755, Feb. '61.
- Israeli Kibbutz Children: Emotional Disturbance in; Mordecai Kaffman, 732, Feb. '61.
- J**
- Japan: Child Psychiatry (Ed.); 753, Feb. '61.
- L**
- Law:
- Common Frontiers of Psychiatry and; Lawrence Z. Freedman, 490, Dec. '60.
- Common Frontiers of Psychiatry and (Corr.); 1044, May '61.
- Cooperation for Research in Psychiatry and; Lawrence Zelic Freedman, 692, Feb. '61.
- Legislation, re Juvenile: In India; Nauttam J. Kothari, 442, Nov. '60.
- Leucotomy: See Psychosurgery.
- Logotherapy: Frankl's (Corr.); 563, Dec. '60.
- M**
- Malamud, William; Bernard J. Alpers, 11, July '60.
- Marriage Annulment (Corr.); 85, July '60.
- Marriage Counseling: Use of, in a University Teaching Clinic; Kenneth E. Appel, 709, Feb. '61.
- Medical Students: Psychiatric Features in; Raymond W. Waggoner, 727, Feb. '61.
- Mental Deficiency:
- Child Psychiatry (Review of Psychiatric Progress, 1960); Leon Eisenberg, 601, Jan. '61.
- The Study of Defect: Adolf Meyer Lecture; Sir Aubrey Lewis, 289, Oct. '60.
- Mental Health in Education (Review of Psychiatric Progress, 1960); W. Carson Ryan, 640, Jan. '61.
- Mental Status Examination: Reliability of; N. Rosenzweig, 1102, June '61.
- Military Psychiatry:
- Current Status of; Albert J. Glass, 673, Feb. '61.
- Military Psychiatry (Review of Psychiatric Progress, 1960); Joseph S. Skobba, 651, Jan. '61.
- Morton Prince's Dissociation Concept (H.N.); Ernest Harms, 941, Apr. '61.
- Murder Without Apparent Motive: A Study in Personality Disorganization; Joseph Satten, 48, July '60.

N

Narcolepsy : Imipramine Hydrochloride in the Treatment of (C.R.) ; Robert E. Peck, 938, Apr. '61.

National Association for Mental Health (Ed.) ; 1125, June '61.

National Institute of Social and Behavioral Pathology (Ed.) ; 847, Mar. '61.

Neonate : Sensory Discrimination ; Wagner H. Bridger, 991, May '61.

Neurology : Clinical Neurology (Review of Psychiatric Progress, 1960) ; William H. Timberlake, 615, Jan. '61.

Neuropathology :

Behavioral Changes in Patients with Strokes ; Montague Ullman, 1004, May '61.

Some Pathological Findings in Schizophrenics ; Donald L. Howie, 59, July '60.

Neurophysiology and Psychopathology :

Neurophysiology, Chemistry and Endocrinology (Review of Psychiatric Progress, 1960) ; O. R. Langworthy, 581, Jan. '61.

Problems in the Correlation of Psychopathology with Electroencephalographic Abnormalities ; Ronald R. Koegler, 822, Mar. '61.

Nigeria : Drug Treatment : The Use of Rauwolfia for the Treatment of Psychoses by Nigerian Native Doctors ; Raymond Prince, 147, Aug. '60.

Nursing, Psychiatric :

Present Day Concepts in Nursing Service Administration in Hospitals for the Mentally Ill ; Angie F. Waldrum, 329, Oct. '60.

Psychiatric Nursing (Review of Psychiatric Progress, 1960) ; Mary F. Liston, 642, Jan. '61.

O

Obesity : And Personality (C.N.) ; Norris Weinberg, 1035, May '61.

Obsessional States ; I. M. Ingram, 1016, May '61.

Obsessive-Compulsive Neurosis : The Obsessive-Compulsive Chronic Alcoholic ; Edward Podolsky, 233, Sept. '60.

Occupational Psychiatry (Review of Psychiatric Progress, 1960) ; Ralph T. Collins, 605, Jan. '61.

Occupational Therapy : Rehabilitation and Occupational Therapy (Review of Psychiatric Progress, 1960) ; Franklin S. DuBois, 657, Jan. '61.

Orbital Undercutting : Late Results of ; William Beecher Scoville, 525, Dec. '60.

Outpatient Clinic : The Impact of Ataractic Drugs on a Mental Hospital : Martin Gross, 444, Nov. '60.

Outpatient Psychiatry : Family Care and (Review of Psychiatric Progress, 1960.) ; Walter E. Barton, 644, Jan. '61.

Past and Present in Psychiatry : Random Reflections (Ed.) ; 370, Oct. '60.

Paton : I remember Stewart Paton (H.N.) ; Clarence B. Farrar, 160, Aug. '60.

Personality Types : Psychic Ingredients of ; Martin B. Giffen, 211, Sept. '60.

Peru : The Social Problem of Epilepsy in (Ed.) ; 163, Aug. '60.

Pharmacotherapy : See Psychopharmacology.

Physiological Treatment (Review of Psychiatric Progress, 1960) ; Joseph Wortis, 595, Jan. '61.

Pisani : Petro Pisani (1760-1837) : A Precursor of Modern Mental Hospital Treatment (H.N.) ; George Mors, 79, July '60.

Poems, Psychiatric : Perfection and Retreat ; Earl D. Bond, 368, Oct. '60.

Polio Protection : 1960 Campaign (Ed.) ; 163, Aug. '60.

Presidential Address : Psychiatric Research : Setting and Motivation ; William Malamud, 1, July '60.

President's Page ; 943, Apr. '61.

Private Practice : The Impact of Recent Research Developments on ; Milton Rose, 429, Nov. '60.

Prognosis : Factors in Schizophrenia ; Werner Simon, 887, Apr. '61.

Psychiatric Education :

Cultivation of Community Mental Hygiene Leadership Ability ; Howard M. Kern, 346, Oct. '60.

Graduate School for ; Paul H. Hoch, 883, Apr. '61.

Psychiatric Education (Review of Psychiatric Progress, 1960) ; Franklin G. Ebaugh, 653, Jan. '61.

Seminar Project for Teachers of Psychiatric Aides ; Garland K. Lewis, 224, Sept. '60.

Teaching the Interpretive Process to Medical Students ; Sidney L. Werkman, 897, Apr. '61.

Psychiatrists' Personality :

And Their Use of Drug Therapy ; Gerald L. Klerman, 111, Aug. '60.

As a Crucial Variable in the Outcome of Treatment with Schizophrenic Patients ; John C. Whitehorn, 215, Sept. '60.

Re Observations : The Operational Matrix of Psychiatric Practice. II. Variability in Psychiatric Impressions and the Projection Hypothesis ; John H. Rehner, 133, Aug. '60.

Psychiatrogenic Illness (Corr.); 165, Aug. '60.

Psychiatry: And Its Methods (Corr.); 684, Jan. '61.

Psychiatry and Law:

Common Frontiers of; Lawrence Zelic Freedman, 490, Dec. '60.

Common Frontiers of (Corr.); 1044, May '61.

Cooperation for Research in; Lawrence Zelic Freedman, 692, Feb. '61.

Psychoanalysis:

Methodology (Corr.); 1045, May '61.

Reintegration of, into Teaching; George C. Ham, 877, Apr. '61.

Psychology: Clinical Psychology (Review of Psychiatric Progress, 1960); Frederick Wyatt, 588, Jan. '61.

Psychoneuroses:

Spontaneous Recovery; Ian Stevenson, 1057, June '61.

Study of Chlordiazepoxide (C.N.); Allan Z. Schartzberg, 922, Apr. '61.

Psychopharmacology:

General Articles:

Antidepressants in Balanced Therapy; David C. English, 865, Apr. '61.

Attitude Toward Medication (C.N.); Donald R. Gorham, 830, Mar. '61.

Cause of False-Positive Tests for Piperazine-Linked Phenothiazines (C.N.); Jack J. Heyman, 924, Apr. '61.

Clinical Screening of Psychopharmacotherapeutic Agents; James H. Ewing, 720, Feb. '61.

Combination Drug Therapy (C.N.); J. A. Barsa, 448, Nov. '60.

Combined Drug Therapy; Jesse F. Casey, 997, May '61.

Combined Tranlycypromine-Trifluoperazine in the Treatment of Patients with Agitated Depressions (C.N.); Stanley Lesse, 1038, May '61.

Comparison of Perphenazine, Proketazone, Nialamide and MO-482 in Chronic Schizophrenics (C.N.); John C. Saunders, 358, Oct. '60.

Controlled Drug Evaluations in Two State Hospitals; Jackson A. Smith, 788, Mar. '61.

Drug Treatment and Psychotherapy in Neurotic and Hyperkinetic Children; Leon Eisenberg, 1088, June '61.

Drug Treatment Evaluation; David W. McCreight, 1094, June '61.

Drug Treatment—Old and New: Vetera et Nova (H.N.); 252, Sept. '60.

Effect of Monase in Depressive States (C.N.); H. Azima, 1029, May '61.

Effect of Phenothiazines on the Interactional Behavior of Schizophrenic Patients; Lucie A. Wood, 825, Mar. '61.

Effect of Three Drugs on the Odor of Schizophrenic Sweat (C.N.); Kathleen Smith, 1034, May '61.

Experiences with Large Scale Interhospital Cooperative Research in Chemotherapy; Eugene M. Caffey, 713, Feb. '61.

Five Antidepressant Comparison; John P. Holt, 533, Dec. '60.

Hazards of Drug Evaluation; J. A. Smith, 118, Aug. '60.

Impact of Ataractic Drugs on a Mental Hospital Outpatient Clinic; Martin Gross, 444, Nov. '60.

Influence of Cortisone-Acetate on some Serum Phosphorus Metabolites in Young Male Schizophrenics (C.N.); Paul Koch, 926, Apr. '61.

Interference of Indican in the Estimation of Phenothiazine (C.N.); S. Mouchly Small, 747, Feb. '61.

Problems of Dose Variation in the Use of Tranquilizing Drugs; Sidney Malitz, 23, July '60.

Prolonged Phenothiazine Hepatitis (C.R.); Bruce H. Bailey, 557, Dec. '60.

Rapid Intensive Treatment of Impending Relapse (C.N.); Herman C. Denber, 74, July '60.

Revised Survey (C.N.); James P. Cattell, 449, Nov. '60.

Revised Survey (Corr.); 756, Feb. '61, and 946, Apr. '61.

Serum Protein Participation and New Drug Evaluation (C.N.); J. R. Shawver, 156, Aug. '60.

Sociopsychological Characteristics of Resident Psychiatrists and Their Use of Drug Therapy; Gerald L. Klerman, 111, Aug. '60.

Treatment of Schizophrenic Reactions with Phenothiazine Derivatives; J. F. Casey, 97, Aug. '60.

Use of Rauwolfia for the Treatment of Psychoses by Nigerian Native Doctors; Raymond Prince, 147, Aug. '60.

Reports on Individual Drugs: Acetyl-beta-methylcholine chloride (Mec-holyl Chloride): Unrelatedness of, Autonomic Reaction Indices (C.N.); David Pearl, 77, July '60.

Amisriptyline (Elavil): A New Antidepressant (C.N.); Joseph A. Barsa, 739, Feb. '61.

Parenteral Use of (C.N.); H. Freed, 455, Nov. '60.

Butyrylperazine (Bayer 1362): Study of (C.N.); Herman C. B. Denber, 1119, June '61.

Chlordiazepoxide (Librium):

And Jaundice (C.R.); Joseph Cacioppo, 1040, May '61.

Controlled Clinical Study of (C.N.); Allan Z. Schwartzberg, 922, Apr. '61.

Chlorprothixine (Taractan):

In Psychotic Depression (C.N.); Harry F. Darling, 931, Apr. '61.

Report on (C.N.); Jane E. Oltman, 1120, June '61.

Chlorzoxazone (Paraflex): As an Adjunct to Electric Convulsive Therapy (C.N.); Otto L. Bendheim, 740, Feb. '61.

Fluphenazine (Prolixin):

In Private Psychiatric Practice (C.N.); Laura E. Morrow, 1031, May '61.

In Rehabilitation of Chronic Schizophrenic Patients (C.N.); Leon Reznikoff, 457, Nov. '60.

Preliminary Results with, in Chronic Psychotic Patients (C.N.); John P. Holt, 157, Aug. '60.

Haloperidol (R-1625): Effect of, in Mental Syndromes (C.N.); H. Azima, 546, Dec. '60.

Imipramine (Tofranil):

And a Monoamine Oxidase Inhibitor (C.N.); Williamina A. Himwich, 928, Apr. '61.

And Enuresis (C.N.); R. E. G. MacLean, 551, Dec. '60.

Clinical Trial Study of (C.N.); Nina Kateryniuk, 742, Feb. '61.

Combined Pharmaco-Fever Treatment with, and Typhoid Vaccine in the Management of Depressive Conditions (C.N.); H. E. Lehmann, 356, Oct. '60.

Comparative Trial of ECT and (C.N.); H. Merskey, 76, July '60.

In the Treatment of Depressive States (C.N.); Jane E. Oltman, 929, Apr. '61.

In the Treatment of Narcolepsy (C.R.); Robert E. Peck, 938, Apr. '61.

Overdosage Danger (C.R.); Genevieve A. Ameson, 934, Apr. '61.

Post-Thyroidectomy Psychosis Treated with (C.R.); Charles A. Cahill, 837, Mar. '61.

Treatment (C.N.); Michael J. Keith, 550, Dec. '60.

Isocarboxazid (Marplan):

Adjuvant Therapy with (C.N.); Stanley R. Dean, 73, July '60.

In Psychotic Depressions (C.N.); Harry F. Darling, 931, Apr. '61.

In the Treatment of Depressive States (C.N.); Jane E. Oltman, 929, Apr. '61.

Variation in Clinical Response to, with Duration of Illness (C.N.); Robert R. Schopbach, 746, Feb. '61.

Methaminodiazepoxide (Librium):

Clinical Report on (C.N.); Robert R. Schopbach, 923, Apr. '61.

Clinical Trial of (C.N.); Morton L. Kurland, 456, Nov. '60.

Comparative Controlled Study with (C.N.); Marshall E. Smith, 362, Oct. '60.

In Chronic Refractory Anxiety (C.N.); A. H. Vogt, 743, Feb. '61.

Methoxydone (AHR-233): In Hospitalized Non-Psychotic Patients (C.N.); Leo Shatin, 833, Mar. '61.

Methoxypromazine (Tentone): In Chronic Schizophrenia (C.N.); Max Apfeldorf, 72, July '60.

Methylphenidate (Ritalin):

Clinical Observations on Ritalin HCl Injectable, Multiple Dose Vial (C.N.); Kurt Witton, 156, Aug. '60.

Interviews in Psychotherapy (C.N.); George A. Rogers, 549, Dec. '60.

Nialamide (Niamid): Activity of, Against Mycobacterium Tuberculosis and Cross Resistance to Isoniazid (Corr.); 269, Sept. '60.

Norethandrolone (Nilevar): In a Mental Hospital on Patients with Bowel and Bladder Incontinence (C.N.); Sol Sherman, 551, Dec. '60.

Pathcole: Effects of, on Schizophrenic Patients (C.N.); G. Vassiliou, 1121, June '61.

Phenelzine (Nardil):

Clinical and Theoretical Observations on (C.N.); Myron F. Weiner, 361, Oct. '60.

Nardil (Corr.): 270, Sept. '60.

Overdosage (C.R.); Sam H. Benbow, 836, Mar. '61.

Piperacetazine (Quide): Clinical Experience with a New Phenothiazine (C.N.); William Mandel, 749, Feb. '61.

Plexonal: Evaluation as a Tranquilizer in the Geriatric Cardiac Patient (C.N.); H. Davanloo, 740, Feb. '61.

Proketazine: Treatment of Schizophrenia with (C.N.); Samuel Friedman, 745, Feb. '61.

Thioridazine (Mellaril):

In Epilepsy (C.N.); Marie M. Frain, 547, Dec. '60.

In the Treatment of Behavioral Disorders

- in Epileptics (C.N.) ; Pablo M. Pauig, 832, Mar. '61.
- Tranlycypromine (Parnate) :**
- In Chronic Refractory Schizophrenics (C.N.) ; Walter Kruse, 548, Dec. '60.
 - In Depression (C.N.) ; Henry V. Agin, 150, Aug. '60.
 - A New Monoamine Oxidase Inhibitor (C.N.) ; Frederick Lemere, 249, Sept. '60.
 - Stelazine and, in Chronic Anergic Schizophrenics (C.N.) ; W. J. Buffaloe, 1030, May '61.
 - Use of Stelazine and, in Chronic Regressed and Withdrawn Patients (C.N.) ; Harbhajan B. Singh, 364, Oct. '60.
- Tranlycypromine and Trifuoperazine (Parstelin) :** Unique Therapeutic Properties of (C.N.) ; Burtrum C. Schiele, 245, Sept. '60.
- Trifuoperazine (Stelazine) :**
- And "Parnate" in Chronic Anergic Schizophrenics (C.N.) ; W. J. Buffaloe, 1030, May '61.
 - And Tranlycypromine in Chronic Refractory Schizophrenics (C.N.) ; Walter Kruse, 548, Dec. '60.
 - Clinical Trial in Back Ward Psychotic Patients (C.N.) ; John A. Guido, 453, Nov. '60.
 - In Aged Depressed Female Patients (C.N.) ; George W. Brooks, 932, Apr. '61.
 - Use of, and Parnate in Chronic Regressed and Withdrawn Patients (C.N.) ; Harbhajan B. Singh, 364, Oct. '60.
- Side Effects :**
- Atropine-Like Poisoning Due to Tranquilizing Agents (C.N.) ; Harbhajan Singh, 360, Oct. '60.
 - Convulsions Associated with Anti-Depressant Drugs (C.N.) ; William L. Sharp, 458, Nov. '60.
 - Drug-Induced Akathisia (C.N.) ; Daniel X. Freedman, 930, Apr. '61.
 - Dystonic Reactions Produced by Tranquilizers (C.N.) ; Solomon Hirsch, 1037, May '61.
 - Hypotension Associated with Thioridazine HCl (C.N.) ; David W. Swanson, 834, Mar. '61.
 - Inhibition of Ejaculation as a, of Mellaril (C.R.) ; Harbhajan Singh, 1041, May '61.
 - Memory Changes with MAO Inhibitor Therapy (C.N.) ; Leon D. Hankoff, 151, Aug. '60.
 - Mood Elevating Effects of Chlorphenoza-
- mine HCl (C.N.) ; Gerald H. Rozan, 155, Aug. '60.
- Persistent Muscular Restlessness after Phenothiazine Treatment (C.N.) ;** Walter Kruse, 152, Aug. '60.
- Psychosurgery :**
- Orbital Undercutting ; William Beecher Scoville, 525, Dec. '60.
 - Psychosurgery (Review of Psychiatric Progress, 1960) ; Walter Freeman, 600, Jan. '61.
- Psychotherapy :**
- And "Moral Treatment" ; Eric T. Carlson, 519, Dec. '60.
 - As A System of Action ; Helen C. Hendin, 903, Apr. '61.
 - Clinical Psychiatry and (Review of Psychiatric Progress, 1960) ; Nolan D. C. Lewis, 591, Jan. '61.
 - Methylphenidate Interviews in (C.N.) ; George A. Rogers, 549, Dec. '60.
 - Public Health and Mental Health : Interdisciplinary Trends in Psychiatry ; Charles E. Goshen, 916, Apr. '61.
 - Puerto Rico : The Sibling Relationship in Group Psychotherapy with Schizophrenics ; Eduardo D. Maldonado-Sierra, 239, Sept. '60.
- ## II
- Reciprocal Complementarity :**
- Consumption of Alcohol and the Hypothesis of ; A. H. Hobbs, 228, Sept. '60.
 - Hypothesis of ; A. H. Hobbs, 54, July '60.
- Regional Psychiatry :** Chicago ; Francis J. Gerty, 1028, May '61.
- Rehabilitation : And Occupational Therapy** (Review of Psychiatric Progress, 1960) ; Franklin S. DuBois, 657, Jan. '61.
- Research Criteria (Corr.) ;** 166, Aug. '60.
- Role Therapy : Concept Linking Society and Personality ;** William F. Knoff, 1010, May '61.
- ## S
- Schizophrenia :**
- Combined Drug Therapy of ; Jesse F. Casey, 997, May '61.
 - Comparison of Perphenazine, Proketazone, Nialamide and MO-482 in Chronic (C.N.) ; John C. Saunders, 358, Oct. '60.
 - The Doctor as a Crucial Variable in the Outcome of Treatment with ; John C. Whitehorn, 215, Sept. '60.
 - Effect of Phenothiazines on ; Lucie A. Wood, 825, Mar. '61.
 - Effects of Pathcole on (C.N.) ; G. Vassiliou, 1121, June '61.

- Family as Aid in Treatment ; Anne S. Evans, 1075, June '61.
- Fluphenazine (Prolixin) in Rehabilitation of (C.N.) ; Leon Reznikoff, 457, Nov. '60.
- Genetic Factors in (Corr.) ; 373, Oct. '60.
- Human Ecology, Disease and ; Loring F. Chapman, 193, Sept. '60.
- Influence of Cortisone-Acetate on some Serum Phosphorus Metabolites in (C.N.) ; Paul Koch, 926, Apr. '61.
- Longitudinal Study of ; H. Klonoff, 348, Oct. '60.
- Methoxypromazine in Chronic (C.N.) ; Max . Apfeldorf, 72, July '60.
- Pathological Findings in ; Donald L. Howie, 59, July '60.
- Problems in the Application of the Basic Criteria of ; Howard N. Cooper, 66, July '60.
- Prognostic Factors in ; Werner Simon, 887, Apr. '61.
- Sibling Relationship in Group Psychotherapy with Puerto Rican Schizophrenics ; Eduardo D. Maldonado-Sierra, 239, Sept. '60.
- Steps Toward the Isolation of a Serum Factor in ; Charles Frohman, 401, Nov. '60.
- Studies of Behavior and the Metabolism of Indole Derivatives in ; Myla J. Cole, 393, Nov. '60.
- Therapy with Stelazine and "Parnate" in (C.N.) ; W. J. Buffaloe, 1030, May '61.
- Treatment of, with Phenothiazine Derivatives ; J. F. Casey, 97, Aug. '60.
- Treatment of, with Proketazone (C.N.) ; Samuel Friedman, 745, Feb. '61.
- Trifluoperazine and Tranlycypromine in Chronic Refractory (C.N.) ; Walter Kruse, 548, Dec. '60.
- Urinary Excretion of Tryptophan Metabolites by Schizophrenic Individuals ; F. Christine Brown, 63, July '60.
- Scrupulosity : Religion and Obsessive Compulsive Behavior in Children ; Wayne M. Weisner, 314, Oct. '60.
- Semantics : Psychiatry, Nature and Science ; Martin Hoffman, 205, Sept. '60.
- Sensory Deprivation :
- Profound Experimental Sensory Isolation ; Jay T. Shurley, 539, Dec. '60.
 - Sensory Deprivation (Corr.) ; 849, Mar. '61.
 - Two Early Reports on the Effects of (Corr.) ; 467, Nov. '60.
- Sex Determination : Psychiatric and Medical Implications of Genetic and Endocrinologic Research in ; Karl Bowman, 481, Dec. '60.
- Shock Therapy :
- "Adequate Relaxation Interim" Following Succinylcholine Administration in ; David J. Impastato, 342, Oct. '60.
 - Aortic Dacron Graft Surgery and (C.R.) ; A. H. Chapman, 937, Apr. '61.
 - Comparative Trial of ECT and Tofrznil (C.N.) ; H. Merskey, 76, July '60.
 - First in U. S. (H.N.) ; Sydney E. Pulver, 845, Mar. '61.
 - "Placebo" (Simulation) (C.R.) ; J. A. Guido, 838, Mar. '61.
 - Use of a New Ultra-Short-Acting Intravenous Anesthetic in (C.N.) ; William Karliner, 355, Oct. '60.
- Social Psychiatry :
- Amsterdam Municipal Psychiatric Service ; Paul V. Lemkau, 779, Mar. '61.
 - Social Psychiatry (Corr.) ; 1046, May '61.
 - Social Psychiatry (Review of Psychiatric Progress, 1960) ; Fritz C. Redlich, 610, Jan. '61.
 - Social Work : Psychiatric Social Work (Review of Psychiatric Progress, 1960) ; Daniel O'Keefe, 639, Jan. '61.
- Sociology :
- Hypothesis of Reciprocal Complementarity ; A. H. Hobbs, 54, July '60.
 - Role : A Concept Linking Society and Personality ; William F. Knoff, 1010, May '61.
 - Sociologist's View of Treatment : Academic Lecture ; Leo Simmons, 385, Nov. '60.
- South Pacific : Psychiatric Census of ; Eric Berne, 44, July '60.
- Stahl, Georg Ernst (1660-1734) (H.N.) ; Ernest Harms, 366, Oct. '60.
- State Hospitals : Children's Unit in a ; Nicholas E. Stratas, 34, July '60.
- Stroke : Mental Changes Following ; Montague Ullman, 1004, May '61.
- Suicide :
- Communication of Suicidal Intent Prior to Hospitalization ; W. Bradford DeLong, 695, Feb. '61.
 - Prevention Center in Los Angeles ; Robert E. Litman, 1084, June '61.
 - Surgery : Psychiatry in Surgical Faculty ; William J. Hockaday, 706, Feb. '61.
 - Sweat : Odor of Schizophrenic (C.N.) ; Kathleen Smith, 1034, May '61.
- T
- Taiwan : Mental Health Program ; Tsung-Yi Lin, 961, May '61.
- Tel Aviv : Psychiatric Facilities in Tokyo and, 1958. (C.N.) ; Irwin J. Klein, 459, Nov. '60.
- Thyroidectomy Psychosis : Treated with Imipramine (C.R.) ; Charles A. Cahill, 837, Mar. '61.

Tokyo : Psychiatric Facilities in, and Tel Aviv, 1958 (C.N.) ; Irwin J. Klein, 459, Nov. '60.

Topectomy : Gottlieb Burckhardt, the Father of (H.N.) ; Christian Mueller, 461, Nov. '60.

Toxic Psychosis : Associated with Phenothiazine (C.R.) ; Albert W. Lang, 939, Apr. '61.

Train Travel : Psychosis During (C.R.) ; Harbhajan Singh, 936, Apr. '61.

Transvestism :

Treatment in (C.R.) ; Veronica M. Pennington, 250, Sept. '60.

Treatment in (Corr.) ; 849, Mar. '61.
Tuberculosis : In State Mental Hospitals ; James W. MacDonald, 125, Aug. '60.
Twins : Psychoses in ; E. Gardner Jacobs, 791, Mar. '61.

U

Urinalysis :

Tests for Drugs (Corr.) ; 561, Dec. '60.

Urinary Excretions (Corr.) ; 374, Oct. '60.

V

Veterans, World War II : A Longitudinal Study of Schizophrenia ; H. Klonoff, 348, Oct. '60.

AUTHOR INDEX

A

- Abe, George Y. : *See* Guido, John A., jt. auth.
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Denber, Herman C. B.; Ross, Elizabeth; and Rajotte, Paul: Study of Butrylperazine (Bayer 1362) (C.N.), 1119, June '61.

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Edwards, R. V.: Gasoline Sniffing (C.R.), 555, Dec. '60.

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Engquist, C. A.: *See* Manson, Morse P., jt. auth.

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Farberow, Norman L.: *See* Litman, Robert E., jt. auth.

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Friedman, Samuel; and Oltman, Jane E.: Treatment of Schizophrenia with Proketazone (C.N.), 745, Feb. '61.

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G

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Gerber, I. E.: *See* Goldfarb, A. I., jt. auth.

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Gibbs, James J.: *See* Glas, Albert J., jt. auth.

Giffen, Martin B.; Kenny, James A.; and Kahn, Theodore C.: Psychic Ingredients of Various Personality Types, 211, Sept. '60.

Gilbert, Anita: *See* Eisenberg, Leon, jt. auth.

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- Haworth, K.: See Mandel, William, jt. auth.
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- Hertzog, Margaret: See Chess, Stella, jt. auth.
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Krell, Arthur : *See* Impastato, David J., jt. auth.

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L

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Lasky, Julian J. : *See* Casey, Jesse F., jt. auth.

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Laurin, Camille : *See* Koch, Paul, jt. auth.

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Lemere, Frederick : Tranylcypromine (Par-nate) A new Monoamine Oxidase Inhibitor (C.N.), 249, Sept. '60.

Lemieux, Roger : *See* Koch, Paul, jt. auth.

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Lennard, Henry L. : *See* Hendin, Helen C., jt. auth.

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Levene, L. J. : *See* Merskey, H., jt. auth.

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Levine, Donald : *See* Small, S. Mouchly, jt. auth.

Levine, Jerome : *See* Small, S. Mouchly, jt. auth.

Levinson, Daniel J. : *See* Klerman, Gerald L., jt. auth.

Lewis, Sir Aubrey : Adolf Meyer Research

Lecture ; The Study of Defect, 289, Oct '60.

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Lewis, Nolan D. C. : *See* McCreight, David W., jt. auth.

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Luby, Elliot D. : *See* Frohman, Charles, jt. auth.

Lukaszewski, Jerome S. : *See* Proctor, Lorne D., jt. auth.

M

McConaghy, N. : Modes of Abstract Thinking and Psychosis, 106, Aug. '60.

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MacDonald, James W. : Tuberculosis in State Mental Hospitals, 125, Aug. '60.

MacDonald, M. Glenn : *See* Brooks, George W., jt. auth.

McGavack, Thomas H. : *See* Apfeldorf, Max, jt. auth.

McKinley, Robert A. : *See* Hamilton, Donald M., jt. auth.

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Majerus, Philip W. : *See* Guze, Samuel, jt. auth.

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Mandel, William : Haworth, K. ; and Jones, L.

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- Mayman, Martin : See Satten, Joseph, jt. auth.
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- Mergener, Marjorie : See Bowman, Karl M., jt. auth.
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- Molling, Peter A. : See Eisenberg, Leon, jt. auth.
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- Moorhead, Harry H. : See Hamilton, Donald M., jt. auth.
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- Morris, Harold M. : See Ewing, James H., jt. auth.
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O

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P

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- Pollack, Max : See Goldfarb, Alvin I., jt. auth.
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R

Rado, Sandor : See Hoch, Paul H., jt. auth.

Raines, George N. : See Rohrer, John H., jt. auth.

Rajotte, Paul : See Denber, Herman C. B., jt. auth.

Randrup, Axel : See Munkvad, I., jt. auth.

Reby, Morris : See McCreight, David W., jt. auth.

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Reinhart, R. B. : See Auerbach, Arthur H., jt. auth.

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Riffel, Rev. Pius A. : See Weisner, Wayne M., jt. auth.

Robbins, Lillian C. : See Thomas, Alexander, jt. auth.

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S

Sandifer, M. G., Jr. : See Buffalo, W. J., jt. auth.

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Scheffen, A. E. : See Auerbach, Arthur H., jt. auth.

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Schmidt, K. T. : See Stratas, Nicholas E., jt. auth.

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Schneck, Jerome M. : Henry N. Hurd and the Johns Hopkins "Big Four" (H.N.), 842, Mar. '61.

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- Sreenivasan, Uma : See Hoenig, J., jt. auth.
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- Stevenson, Ian : Processes of "Spontaneous" Recovery from the Psychoneuroses, 1057, June '61.
- St. John, William T. : See Barton, Walter E., jt. auth.
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- Super, Wm. C. : See Benbow, Sam H., jt. auth.
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- Sweeney, Vincent C. : See Glass, Albert J., jt. auth.
- Sytryn, Leon : See Eisenberg, Leon, jt. auth.

T

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- Tobin, Joseph M. : See McCreight, David W., jt. auth.
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U

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V

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- Vanderkamp, Harry : See Pearl, David, jt. auth.
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- Wirt, Robert D. : *See* Simon, Werner, jt. auth.
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- Z
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- Zeigler, Thornton W. : *See* Waggoner, Raymond W., jt. auth.
- Zuckerman, Marvin : *See* Nurnberger, John, jt. auth.